NPL STIC Search
Databases History and
Inventor Search Results
09/781,035
Performed 1-19-2006
Ex TAF AU3859

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SYSTEM:OS  - DIALOG OneSearch
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*File 155: Medline has resumed updating.
  File   2:INSPEC 1898-2006/Dec W4
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*File   2: Archive data back to 1898 has been added to File 2.
  File   5:Biosis Previews(R) 1969-2006/Jan W2
         (c) 2006 BIOSIS
  File   6:NTIS 1964-2006/Jan W2
         (c) 2006 NTIS, Intl Cpyrght All Rights Res
  File   8:Ei Compendex(R) 1970-2006/Jan W2
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  File  73:EMBASE 1974-2006/Jan 18
         (c) 2006 Elsevier Science B.V.
  File 987:TULSA (Petroleum Abs) 1965-2006/Jan W1
         (c)2006 The University of Tulsa
*File 987: GR (Greece), IS (Iceland), SG (Singapore), and SI (Slovenia)
have been added to AC=.
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         (c)2006 Japan Science and Tech Corp(JST)
  File  35:Dissertation Abs Online 1861-2005/Dec
         (c) 2005 ProQuest Info&Learning
  File 144:Pascal 1973-2006/Dec W4
         (c) 2006 INIST/CNRS
  File 105:AESIS 1851-2001/Jul
         (c) 2001 Australian Mineral Foundation Inc
*File 105: This file is closed (no updates)
  File  99:Wilson Appl. Sci & Tech Abs 1983-2005/Dec
         (c) 2006 The HW Wilson Co.
  File  58:GeoArchive 1974-2005/Jun
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  File  34:SciSearch(R) Cited Ref Sci 1990-2006/Jan W2
         (c) 2006 Inst for Sci Info
  File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
         (c) 1998 Inst for Sci Info
  File 292:GEOBASE(TM) 1980-2005/Dec W4
         (c) 2005 Elsevier Science Ltd.
  File  89:GeoRef 1785-2006/Jan B1
         (c) 2006 American Geological Institute
*File  89: Please see HELP ALERTALL for new Alert frequency and
price. Please see HELP RATES 89 for new Academic Subscriber rates.
  File  65:Inside Conferences 1993-2006/Jan W3
         (c) 2006 BLDSC all rts. reserv.
  File 350:Derwent WPIX 1963-2006/UD,UM &UP=200604
         (c) 2006  Thomson Derwent
*File 350: For more current information, include File 331 in your search.
Enter HELP NEWS 331 for details.
  File 347:JAPIO Nov 1976-2005/Aug(Updated 051205)
         (c) 2005 JPO & JAPIO
  File  23:CSA Technology Research Database 1963-2006/Jan
         (c) 2006 CSA.
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Set	Items	Description
S1	173	AU=(MADARASZ, F? OR MADARASZ F?)
S2	270	AU=(INGUVA, R? OR INGUVA R?)
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S5	3	RD (unique items)
S6	433	S3 NOT S4
S7	13	S6 AND (BAYE?? OR BAYES OR BAYESIAN)(2N)(THEOR? OR METHOD? ? OR THEOREM? ?)
S8	9	RD (unique items)
S9	420	S6 NOT S7
S11	0	S9 AND IC=(G01V-003/00 OR G01R-033/563)

5/3,AB/1 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

02738329
E.I. Monthly No: EI8905044825
Title: Mathematical model for in situ oil shale retorting by electromagnetic radiation.
Author: Baker-Jarvis, James; **Inguva, Ramarao**
Corporate Source: North Dakota State Univ, Fargo, ND, USA
Source: Fuel v 67 n 7 Jul 1988 p 916-926
Publication Year: 1988
CODEN: FUELAC ISSN: 0016-2361
Language: English
Abstract: A mathematical model for electromagnetic heating of oil shales is developed. The model simulates the process of oil and gas evolution and transfer through consolidated blocks of oil shale. The model includes equations for temperature, pressure, saturations, chemical reactions, mass conservation and source terms. The inert gases are all assumed to form one bulk species and the oil is assumed to be either in the gaseous or liquid phase. The chemical reactions include pyrolysis of kerogen and char, release of bound water, coking and decomposition of carbonates. (Edited author abstract) 24 Refs.

N/A THF 1-20-2006

5/3,AB/2 (Item 1 from file: 987)
DIALOG(R)File 987:TULSA (Petroleum Abs)

00632878 PETROLEUM ABSTRACTS NO.: 378296
HEAT CONDUCTION IN HETEROGENEOUS MATERIALS
BAKER-JARVIS J; **INGUVA R**
WYOMING UNIV
J HEAT TRANSFER V 107, NO 1, PP 39-43, FEB 1985 (ISSN 00221481)
1985
ISSN: 0022-1481
LANGUAGE: ENGLISH
A new solution to the heat equation in composite media is dervied using a variational principle developed by Ben-Amoz. The model microstructure is fed into the equations via a term for the polar moment of the inclusions in a representative volume. The general solution is presented as an integral in terms of sources and a Green function. The problem of uniqueness is studied to determine appropriate boundary conditions. The solution reduces to the solution of the normal heat equation in the limit of homogeneous media.

N/A THF 1-20-2006

5/3,AB/3 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

N/A THF 1-20-2006

016042379
WPI Acc No: 2004-200230/200419
Related WPI Acc No: 1998-193278; 1999-166484; 2001-512959; 2002-009995; 2002-673660; 2003-656764
XRAM Acc No: C04-079237
XRPX Acc No: N04-158860
Opto-electronic device for quantitative analysis of specimen containing target molecule, has polarizer, specimen cell, polarizing analyzer and

comparison mechanism
Patent Assignee: XOETRONICS LLC (XOET-N)
Inventor: ENGELHAUPT D; **INGUVA R**; **MADARASZ F**; MILELLI J; WYLY J
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6636752	B1	20031021	US 9624727	P	19960910	200419	B
			US 97858260	A	19970519		
			US 99249677	A	19990212		
			US 2000505533	A	20000217		

Priority Applications (No Type Date): US 9624727 P 19960910; US 97858260 A 19970519; US 99249677 A 19990212; US 2000505533 A 20000217
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6636752	B1		29	A61B-005/00	Provisional application US 9624727 Cont of application US 97858260 CIP of application US 99249677 Cont of patent US 5871442 CIP of patent US 6236870

Abstract (Basic): US 6636752 B1
Abstract (Basic):
NOVELTY - An opto-electronic device has a polarizer for producing a segmented band of partially polarized polychromatic light from a band of partially polarized polychromatic light; a specimen cell for receiving a specimen and for transporting the segmented band of light to the specimen; a polarizing analyzer optically coupled to the segmented band of light exiting the specimen; and a comparison mechanism for comparing the segmented bands of light.
DETAILED DESCRIPTION - An opto-electronic device utilizing a band of partially polarized polychromatic light for quantitative analysis of a specimen containing a target molecule, comprises a polarizer for producing a segmented band of partially polarized polychromatic light from the band of partially polarized polychromatic light; a specimen cell adapted for receiving the specimen and for transporting the segmented band of partially polarized polychromatic light to the specimen; a polarizing analyzer (34) optically coupled to the segmented band of partially polarized polychromatic light exiting the specimen; and a comparison mechanism for comparing the segmented band of partially polarized polychromatic light before entering the specimen with the segmented band of partially polarized polychromatic light after exiting the specimen. The target molecule changes ellipticity of the segmented band of partially polarized polychromatic light. The specimen cell is adapted for detecting an air borne indication of the target molecule. An INDEPENDENT CLAIM is also included for a method for quantitative analysis of a target molecule within a specimen, comprising producing elliptical/partially polarized polychromatic light; producing segmented characterized light with a polarizer optically coupled to the elliptical/partially polarized polychromatic light; collecting a specimen in a continuous **flowing fluid**; transporting the segmented characterized light onto and through the specimen; polarizing the segmented characterized light exiting the specimen; and comparing the segmented characterized light before entering the specimen with the segmented characterized light after exiting the specimen, where the target molecule changes ellipticity of the segmented characterized light.
USE - For quantitative analysis of a specimen containing a target molecule.
ADVANTAGE - The inventive device provides a non-invasive

quantitative determination of target substances within the specimen.

DESCRIPTION OF DRAWING(S) - The figure is a block diagram of a photonic molecular probe.

Polarizing beam splitter (20)
Collimator (28)
Finger cell (30)
Polarizing analyzer (34)
Beam reducer (36)
pp; 29 DwgNo 1/15

8/3,AB/1 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

07113453 INSPEC Abstract Number: B9902-6140-007, C9902-1260S-010
Title: Fusion of LWIR sensor data by **Bayesian methods**
Author(s): **Inguva, R.**; Garrison, G.
Author Affiliation: Sci. & Technol. Consultants, East West Enterprises Inc., Huntsville, AL, USA
Journal: Proceedings of the SPIE - The International Society for Optical Engineering Conference Title: Proc. SPIE - Int. Soc. Opt. Eng. (USA) vol.3376 p.161-74
Publisher: SPIE-Int. Soc. Opt. Eng,
Publication Date: 1998 Country of Publication: USA
CODEN: PSISDG ISSN: 0277-786X
SICI: 0277-786X(1998)3376L.161:FLSD;1-4
Material Identity Number: C574-98140
U.S. Copyright Clearance Center Code: 0277-786X/98/$10.00
Conference Title: Sensor Fusion: Architectures, Algorithms, and Applications II
Conference Sponsor: SPIE
Conference Date: 16-17 April 1998 Conference Location: Orlando, FL, USA
Language: English
Abstract: Using **Bayesian** statistical **methods** a formulation is setup for fusing multi band data from LWIR sensors. This formulation is illustrated with applications to synthetic data consisting of 100 signatures in the wavelength bands 6-10 mu m, 11-16 mu m and 17-21 mu m. Following the works of Jaynes (1996), and Bretthorst (1988), a Bayesian formulation is given for detrending the time series data for the emissive area, followed by estimations of frequencies and their amplitudes. This formulation is illustrated with analysis of the synthetic data.
Subfile: B C

N/A TAF 1-20-2006

8/3,AB/2 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

06219667 INSPEC Abstract Number: B9605-6310-009
Title: Time-domain electromagnetic responses and model uncertainties
Author(s): **Inguva, R.**; Smith, C.R.; Goggans, P.M.; Andersh, D.J.
Author Affiliation: Dept. of Phys. & Astron., Wyoming Univ., Laramie, WY, USA
Conference Title: Conference Proceedings. 10th Annual Review of Progress in Applied Computational Electromagnetics Part vol.2 p.353-63 vol.2
Publisher: Appl. Comput. Electromagnetics Soc, Monterey, CA, USA
Publication Date: 1994 Country of Publication: USA 2 vol. (xv+583+612) pp.
Material Identity Number: XX96-00436
Conference Title: Proceedings of the Tenth Annual Review of Progress in Applied Computational Electromagnetics
Conference Sponsor: ACES; DOD; DOE; IEEE; URSI; ASEE; SIAM; AMTA
Conference Date: 21-26 March 1994 Conference Location: Monterey, CA, USA
Language: English
Abstract: Uncertainties in the geometry of scattering systems may have major implications for system identification based on electromagnetic signatures. We derive a probability distribution to be used for system

identification under conditions of model uncertainties; this distribution will allow us to study the effects of such uncertainties on system identification. We investigate in detail the effects of perturbations of the dimensions of an open-ended cavity on its time-domain response. We are exclusively concerned here with radar returns from open ended cavities. We report on numerical results in the high-frequency regime, performed for rectangular and circular geometries using the modal expansion method.
Subfile: B

8/3,AB/3 (Item 3 from file: 2)
DIALOG(R)File 2:INSPEC

05877060 INSPEC Abstract Number: A9505-9365-004, C9503-7340-039
Title: Maximum entropy-driven Bayesian reasoning in data classification
Author(s): Bonavito, N.L.; Gordon, C.L.; **Inguva, R.**; Serafino, G.N.
; Barnes, R.A.
Author Affiliation: Space Data & Comput. Div., NASA Goddard Space Flight Center, Greenbelt, MD, USA
Journal: Telematics and Informatics vol.11, no.4 p.295-308
Publication Date: Fall 1994 Country of Publication: UK
CODEN: TEINEG ISSN: 0736-5853
U.S. Copyright Clearance Center Code: 0736-5853/94/$6.00+.00
Conference Title: 1994 Goddard Conference on Space Applications of Artificial Intelligence
Conference Date: May 1994 Conference Location: Greenbelt, MD, USA
Language: English
Abstract: Most signals reaching the mammalian brain are noisy, weak, and degraded so that the corresponding data that are carried by the signals are themselves incomplete and overlapping, and, more likely than not, the product of convolution with nonlinear sources. The attempt to deconvolve these signals so as to extract the maximum meaningful information and make the best possible decisions usually leads to problems that are mathematically known as ill-posed and ill-conditioned. That is, there may exist insufficient information from which to draw unique conclusions, and simultaneously, small uncertainties within the datasets may lead to mutual inconsistencies within the competing hypotheses. How the brain processes signals and attempts to learn from them is a mystery. Under the best of circumstances, the brain can usually perform well when solving problems involving deductive inferencing. However, when attempting to form decisions from incomplete or ambiguous pieces of information, it often falls prey to what is referred to as "cognitive illusions." The article illustrates the potential for powerful artificial intelligence (AI) techniques when used in the analysis not only of the formidable problems that now exist in the NASA earth science programs, but also those to be encountered in the future Mission to Planet Earth (MTPE) and Earth Observing System (EOS) programs. These techniques, based on the logical and probabilistic reasoning aspects of plausible inference, strongly emphasize the synergetic relation between data and information. In particular, we address a complex, nonlinear system of under-determined and ill-conditioned equations that arise from the conditions of insufficient and overlapping data.
Subfile: A C

8/3,AB/4 (Item 4 from file: 2)
DIALOG(R)File 2:INSPEC

04058320 INSPEC Abstract Number: B88010034
Title: Remote sensing and ill-posed problems
Author(s): Smith, C.R.; **Inguva, R.**
Conference Title: SOUTHCON/87. Conference Record p.16/2-6
Publisher: Electron. Conventions Manage, Los Angeles, CA, USA
Publication Date: 1987 Country of Publication: USA 502 pp.
Conference Sponsor: IEEE; ERA
Conference Date: 24-26 March 1987 Conference Location: Atlanta, GA, USA
Language: English
Abstract: The mechanism of information gathering entails, with rare exceptions, some loss of information, because of the coarseness and inaccuracy of the measurement process and because of noise. Discussion is confined to optical imaging (e.g. photography). The reconstruction of the scene on the basis of an imperfect image is an example of an ill-posed problem. The authors consider the situation of an out-of-focus camera image. They discuss the principles of maximum entropy, multiplicities and restoration of noisy signals.
Subfile: B

N/A THF 1-20-2006

8/3,AB/5 (Item 1 from file: 6)
DIALOG(R)File 6:NTIS

1236527 NTIS Accession Number: DE85005328
Bayesian Methods for Estimation of Environmental Quality from Synthetic Fuel Byproducts Data
Taylor, J. ; **Inguva, R.**
Wyoming Univ., Laramie. Dept. of Physics.
Corp. Source Codes: 018045009; 9519915
Sponsor: Department of Energy, Washington, DC.
Report No.: DOE/LC/10988-1716
Feb 85 328p
Languages: English
Journal Announcement: GRAI8613; NSA1100

N/A THF 1-20-2006

Portions of this document are illegible in microfiche products. Original copy available until stock is exhausted. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)321-8547; and email at orders@ntis.fedworld.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.
NTIS Prices: PC A15/MF A01
When this project was initially defined, there were two final objectives to be met in the investigation. First, Western Research Institute (WRI) had an interest in finding a reduced set of monitoring variables in order that the expense of environmental compliance might be lessened. Second, a quality function was needed which would enable quantitative comparisons of the overall quality of water samples and to aid in collecting evidence in favor of a modified set of environmental quality classification standards. These were narrowly defined goals relating to a specific type of problem. The task was to develop the methodology to meet the objectives. That has now been accomplished. It has been seen, however, that the methods developed in part 2 of this document are of a very general nature. They are founded on **Bayes theorem** and constitute a formulation for tackling decision making problems of all kinds. Two such possible applications were outlined in an earlier chapter. The first dealt with geophysical seismic pattern recognition in the search for small hydrocarbon deposits. Also, it was noted that **Bayesian** decision **theory** could be of assistance in the area of astrophysical image processing.

Additionally, a simple quality control example was carried through to completion in part 2. The beauty of the Bayesian approach is that there is no conceptual difference between, say, a simple quality control problem and an arbitrarily complicated quality control problem. Armed with **Bayes theorem** , one knows how to proceed at all stages and through to the solution. Applying the **Bayesian method** to a decision or probability problem is always the right thing to do. 39 refs., 17 figs. (ERA citation 11:019037)

8/3,AB/6 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

MH IHF 1-20-2006

01866985
E.I. Monthly No: EIM8504-023541
Title: MONITORING PERFORMANCE OF ENVIRONMENTAL CONTROL TECHNOLOGY.
Author: **Inguva, Ramarao**; Taylor, James; Sheesley, David
Corporate Source: Univ of Wyoming, Dep of Physics & Astronomy, Laramie, WY, USA
Conference Title: 1984 Annual Meeting - American Institute of Chemical Engineers.
Conference Location: San Francisco, CA, USA Conference Date: 19841125
E.I. Conference No.: 06316
Source: Annual Meeting - American Institute of Chemical Engineers 1984. Publ by AIChE, New York, NY, USA Pap 114F, 36p
Publication Year: 1984
CODEN: AMAEDX ISSN: 0196-7282
Language: English
Abstract: This paper is concerned with quality of data in synthetic fuel byproducts (in particular water) with respect to environmental control of impact and mitigation. Existing methods for monitoring the data on synthetic fuel by products in fossil fuel technologies are reviewed. The results of applying traditional statistics for product concentrations, regression analysis, and nonparametric methods are discussed. It is shown that the data may not always be amenable to standard statistical analysis. Alternate techniques using **Bayesian methods** are suggested for improved analysis. The relevance of this work to monitoring performance of environmental control technology is discussed. 4 refs.

8/3,AB/7 (Item 1 from file: 65)
DIALOG(R)File 65:Inside Conferences

MH IHF 1-20-2006

02456144 INSIDE CONFERENCE ITEM ID: CN025652846
Fusion of LWIR sensor data by **Bayesian methods** (3376-17)
Inguva, R.; Garrison, G.
CONFERENCE: Sensor fusion: architectures, algorithms, and applications-Conference; 2nd
PROCEEDINGS-SPIE THE INTERNATIONAL SOCIETY FOR OPTICAL ENGINEERING, 1998 ; ISSUE 3376 P: 161-174
SPIE, 1998
ISSN: 0277-786X ISBN: 0819428256
LANGUAGE: English DOCUMENT TYPE: Conference Papers
CONFERENCE EDITOR(S): Dasarathy, B. V.
CONFERENCE SPONSOR: SPIE
CONFERENCE LOCATION: Orlando, FL
CONFERENCE DATE: Apr 1998 (199804) (199804)
NOTE:

Held as part of the 1998 SPIE Aerosense symposium

8/3,AB/8 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016653978
WPI Acc No: 2004-812698/200480
XRPX Acc No: N04-641281
Magnetic resonance imaging flow parameter estimating method for medical diagnosis, involves resolving magnetic imaging data with respect to magnetic resonance imaging model, using conditional probabilities based on **Bayes` Theorem**
Patent Assignee: INGUVA R (INGU-I); MADARASZ F L (MADA-I)
Inventor: **INGUVA R; MADARASZ F L**
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20040217760	A1	20041104	US 2000181823	P	20000211	200480 B
			US 2001781035	A	20010209	

Priority Applications (No Type Date): US 2000181823 P 20000211; US 2001781035 A 20010209
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20040217760	A1		11	G01V-003/00	Provisional application US 2000181823

Abstract (Basic): US 20040217760 A1
Abstract (Basic):

NOVELTY - The method involves accessing magnetic resonance imaging data and providing a magnetic resonance imaging model function. The magnetic imaging data is resolved with respect to the magnetic resonance imaging model using conditional probabilities based on **Bayes` Theorem**. The probabilities are compared for two noise models and determining which noise model of the two noise models is better.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a system for flow parameter estimates in magnetic resonance imaging.

USE - Used for estimating a flow parameter in magnetic resonance imaging that provides information about anatomical structure, enables quantitative anatomical studies of diseases, derivation of computerized anatomical atlases, and three-dimensional visualization of internal anatomy that is utilized for pre-operative and intra-operative visualization, and in the guidance of therapeutic intervention.

ADVANTAGE - The method facilitates for resolving the magnetic imaging data, using conditional probabilities based on **Bayes` Theorem**, thus providing higher resolution and detail flow parameters for smaller/ deeper vessels.

DESCRIPTION OF DRAWING(S) - The drawing shows an overview of a magnetic resonance imaging system.

Computer system (114)
Spectrometer (126)
Front-end-controller (128)
Power amplifier (134)
Waveform generator (138)
pp; 11 DwgNo 1/2

Applicants own Instant Application N/A TAF 1-20-2006

8/3,AB/9 (Item 1 from file: 23)
DIALOG(R)File 23:CSA Technology Research Database

0005574024 IP ACCESSION NO: A98-41547
Pulse coupled neural network sensor fusion

Johnson, J L; Schamschula, M P; **Inguva, R**; Caulfield, H J
U.S. Army, Redstone Arsenal, AL [Johnson]

PAGES: 219-226
PUBLICATION DATE: 1998

PUBLISHER: Bellingham, WA: Society of Photo-Optical Instrumentation Engineers (SPIE Proceedings. Vol. 3376)

CONFERENCE:
Sensor fusion: Architectures, algorithms, and applications II; Proceedings of the Meeting, Orlando, FL, UNITED STATES, 16-17 Apr. 1998

DOCUMENT TYPE: Conference Paper
RECORD TYPE: Abstract
LANGUAGE: ENGLISH
NUMBERS: A98-41528 11-63; SPIE-3376
FILE SEGMENT: Aerospace & High Technology

N/A TAF 1-20-2006

ABSTRACT:
We investigate how a computer-modeled cortex - the PCNN (Pulse Coupled Neural Network) - performs as a sensor fusing element. In essence, the PCNN is comprised of an array of integrate-and-fire neurons with one neuron for each input pixel. In such a system, the neurons corresponding to bright pixels reach firing threshold faster than the neurons corresponding to duller pixels. Thus, firing rate is proportional to brightness. In PCNNs, when a neuron fires, it sends some of the resulting signal to its neighbors. This linking can cause a near-threshold neuron to fire earlier than it would have otherwise. This leads to synchronization of the pulses across large regions of the image. We can simplify the 3D PCNN output by integrating out the time dimension. Over a long-enough time interval, the resulting 2D (x,y) pattern is the input image. The PCNN has taken it apart and put it back together again. The shorter-term time integrals are discussed in the paper. The main thrust of this paper is the use of multiple PCNNs mutually coupled in various ways to assemble a single 2D pattern or fused image. Results of experiments on PCNN image fusion and an evaluation of its advantages are our primary objectives. (Author)
Abstract

NPC STIC Search Databases, History and Results 09/781,035 Performed 1-19-2006 Ex THF AU 2859

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SYSTEM:OS  - DIALOG OneSearch
  File 155:MEDLINE(R) 1951-2005/Dec 14
         (c) format only 2006 Dialog
*File 155: Medline has resumed updating.
  File   2:INSPEC 1898-2006/Dec W4
         (c) 2006 Institution of Electrical Engineers
*File   2: Archive data back to 1898 has been added to File 2.
  File   5:Biosis Previews(R) 1969-2006/Jan W2
         (c) 2006 BIOSIS
  File   6:NTIS 1964-2006/Jan W2
         (c) 2006 NTIS, Intl Cpyrght All Rights Res
  File   8:Ei Compendex(R) 1970-2006/Jan W2
         (c) 2006 Elsevier Eng.  Info. Inc.
  File  73:EMBASE 1974-2006/Jan 18
         (c) 2006 Elsevier Science B.V.
  File 987:TULSA (Petroleum Abs) 1965-2006/Jan W1
         (c)2006 The University of Tulsa
*File 987: GR (Greece), IS (Iceland), SG (Singapore), and SI (Slovenia)
have been added to AC=.
  File  94:JICST-EPlus 1985-2006/Nov W1
         (c)2006 Japan Science and Tech Corp(JST)
  File  35:Dissertation Abs Online 1861-2005/Dec
         (c) 2005 ProQuest Info&Learning
  File 144:Pascal 1973-2006/Dec W4
         (c) 2006 INIST/CNRS
  File 105:AESIS 1851-2001/Jul
         (c) 2001 Australian Mineral Foundation Inc
*File 105: This file is closed (no updates)
  File  99:Wilson Appl. Sci & Tech Abs 1983-2005/Dec
         (c) 2006 The HW Wilson Co.
  File  58:GeoArchive 1974-2005/Jun
         (c) 2005 Geosystems
  File  34:SciSearch(R) Cited Ref Sci 1990-2006/Jan W2
         (c) 2006 Inst for Sci Info
  File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
         (c) 1998 Inst for Sci Info
  File 292:GEOBASE(TM) 1980-2005/Dec W4
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*File  89: Please see HELP ALERTALL for new Alert frequency and
price. Please see HELP RATES 89 for new Academic Subscriber rates.
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  File 350:Derwent WPIX 1963-2006/UD,UM &UP=200604
         (c) 2006  Thomson Derwent
*File 350: For more current information, include File 331 in your search.
Enter HELP NEWS 331 for details.
  File 347:JAPIO Nov 1976-2005/Aug(Updated 051205)
         (c) 2005 JPO & JAPIO
  File  23:CSA Technology Research Database 1963-2006/Jan
         (c) 2006 CSA.
```

Databases

Set	Items	Description
S1	1964485	MRI OR MAGNETIC(1W)(IMAG? OR IMAGING) OR MAGNETIC(W)RESONAN? OR NMR OR NUCLEAR()MAGNETIC()RESONANCE OR FTNMR OR FTMRI OR MAGNETORESONANCE OR PMR OR PROTON(W)MAGNETIC(W)RESONAN? OR MR()(IMAGE? OR IMAGING)
S2	47038	MC=(S01-E02A2 OR S03-E07A OR S01-E02A8A OR S01-E02A1 OR S03-E07C OR S05-D02B1 OR S03-C02F1) OR IC=(G01R-003 OR G01N-024/08 OR G01V-003/A75) OR CC=(A0758 OR A8760I OR B7510N)
S3	1979745	S1:S2
S4	2463740	BLOODFLOW? OR (BLOOD OR LIQUID? ? OR FLUID? ? OR AQUA OR AQUEOUS OR AQUAE OR AQUAS OR H2O OR WATER?? OR MOISTUR?)(2N)(FLOW? OR CHANNEL? OR CHAMBER???? OR VESSEL??? OR SECTION???? OR MODUL???? OR ENCLOSUR??? OR TUNNEL? OR CONTAINER? ?)
S5	51815	(BAYE?? OR BAYESIAN)(2N)(THEOR? OR METHOD? ? OR THEOREM? ?)
S6	222	(BAYE?? OR BAYES OR BAYESIAN)(2N)(VELOCIT? OR ACCELERAT? OR TURBULEN? OR PHASE??()SHIFT???? OR GRADIENT?(2N)FLOW?)
S7	51902	S5:S6
S8	18067	MOTION?(1N)(PURPOSE???? OR INTENTION????)(1N)PARAMETER????? OR MOTION?(2N)PARAMETER?????
S9	4197749	VELOCIT? OR ACCELERAT? OR TURBULEN? OR PHASE??()SHIFT???? OR GRADIENT?(2N)FLOW?
S10	4211786	S8:S9
S11	220468	PHASE???()SHIFT????
S12	27409	GRADIENT?(2N)FLOW?
S13	4552	IC=(G01V-003/00 OR G01R-033/563)
S14	58362	S3 AND S4
S15	24	S14 AND S7
S16	9	S15 AND S10
S17	5	RD (unique items)
S18	5	S17 NOT PY>2000
S19	15	S15 NOT S16
S20	0	S19 AND S11
S21	0	S19 AND S12
S22	0	S19 AND S13
S23	12	RD S19 (unique items)
S24	58338	S14 NOT S15
S25	9347	S24 AND S10
S26	43	S25 AND S13
S27	6	S26 AND (S11 OR S12)
S28	6	RD (unique items)
S29	37	S26 NOT S27
S30	37	S29 AND S4
S31	0	S30 AND S7
S32	2	S13 AND S7
S33	2	RD (unique items)
S34	307	S7 AND S4
S35	39	S34 AND S10
S36	0	S35 AND S11
S37	0	S35 AND S12
S38	29	RD S35 (unique items)
S39	5	S38 AND S3
S40	5	RD (unique items)
S41	24	S38 NOT S39
S42	24	RD (unique items)
S43	0	S42 AND S13
S44	8	S42 NOT PY>2000
S45	1418	S7 AND CONDITION?(2N)(PROBABILIT? OR PARAMETER? ? OR VARIA-

Search History

BLE? ?)
S46 13 S45 AND S3
S47 10 RD (unique items)

18/3,AB/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

11360358 PMID: 8847973
Measurement of pulsatile flow using **MRI** and a Bayesian technique of probability analysis.
Wise R G; Newling B; Gates A R; Xing D; Carpenter T A; Hall L D
Herchel Smith Laboratory for Medicinal Chemistry, University of Cambridge School of Clinical Medicine, UK.
Magnetic resonance imaging (UNITED STATES) 1996, 14 (2) p173-85, ISSN 0730-725X Journal Code: 8214883
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed

Not "In Vivo"
No dynamic model function
Not for flow access a blood vessel

N/A PAF
1-20-2006

This work shows that complete spatial information of periodic pulsatile **fluid flows** can be rapidly obtained by Bayesian probability analysis of flow encoded **magnetic resonance imaging** data. These data were acquired as a set of two-dimensional images (complete two-dimensional sampling of k-space or reciprocal position space) but with a sparse (six point) and nonuniform sampling of q-space or reciprocal displacement space. This approach enables more precise calculation of fluid **velocity** to be achieved than by conventional two q-sample phase encoding of **velocities** , without the significant time disadvantage associated with the complete flow measurement required for Fourier **velocity** imaging. For experimental comparison with the Bayesian analysis applied to nonuniformly sampled q-space data, a Fourier **velocity** imaging technique was used with one-dimensional spatial encoding within a selected slice and a uniform sampling of q-space using 64 values of the pulsed gradients to encode **fluid flow**. Because the pulsatile flows were axially symmetric within the resolution of the experiment, the radial variation of fluid **velocity**, in the direction of the pulsed gradients, was reconstructed from one-dimensional spatial projections of the **velocity** by exploiting the central slice theorem. Data were analysed for internal consistency using linearised flow theories. The results show that nonuniform q-space sampling followed by Bayesian probability analysis is at least as accurate as the combined uniform q-space sampling with Fourier **velocity** imaging and projection reconstruction method. Both techniques give smaller errors than a two-point sampling of q-space (the conventional flow encoding experiment).

18/3,AB/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10194589 PMID: 8505900
On the use of **Bayesian** probability **theory** for analysis of exponential decay data: an example taken from intravoxel incoherent motion experiments.
Neil J J; Bretthorst G L
Department of Pediatrics, Washington University School of Medicine, St. Louis, Missouri.
Magnetic resonance in medicine - official journal of the Society of Magnetic Resonance in Medicine / Society of Magnetic Resonance in Medicine (UNITED STATES) May 1993, 29 (5) p642-7, ISSN 0740-3194
Journal Code: 8505245
Contract/Grant No.: GM30331; GM; NIGMS; NS01453; NS; NINDS; RR 02469; RR;

NCRR
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed

N/A TAF 1-20-2006

Traditionally, the method of nonlinear least squares (NLLS) analysis has been used to estimate the parameters obtained from exponential decay data. In this study, we evaluated the use of **Bayesian** probability **theory** to analyze such data; specifically, that resulting from intravoxel incoherent motion **NMR** experiments. Analysis was done both on simulated data to which different amounts of Gaussian noise had been added and on actual data derived from rat brain. On simulated data, Bayesian analysis performed substantially better than NLLS under conditions of relatively low signal-to-noise ratio. **Bayesian** probability **theory** also offers the advantages of: a) not requiring initial parameter estimates and hence not being susceptible to errors due to incorrect starting values and b) providing a much better representation of the uncertainty in the parameter estimates in the form of the probability density function. Bayesian analysis of rat brain data was used to demonstrate the shape of the probability density function from data sets of different quality.

18/3,AB/3 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

Not a dynamic model Function with conditional Bayes Theorem Probabilities No Hamiltonian Vessel

N/A TAF 1-20-2006

06591063 INSPEC Abstract Number: A9713-8760I-009, B9707-7510B-028, C9707-7330-043
Title: Regularized estimation of flow patterns in MR velocimetry
Author(s): Herment, A.; Giovannelli, J.-F.; Mousseaux, E.; Idier, J.; Decesare, A.; Jolivet, O.; Bittoun, J.
Author Affiliation: Inst. Nat. de la Sante et de la Recherche Med., Paris, France
Conference Title: Proceedings. International Conference on Image Processing (Cat. No.96CH35919) Part vol.3 p.291-4 vol.3
Publisher: IEEE, New York, NY, USA
Publication Date: 1996 Country of Publication: USA 3 vol. (xlviii+1029+1067+1073) pp.
ISBN: 0 7803 3259 8 Material Identity Number: XX96-03469
U.S. Copyright Clearance Center Code: 0 7803 3258 X/96/$5.00
Conference Title: Proceedings of 3rd IEEE International Conference on Image Processing
Conference Sponsor: IEEE Signal Process. Soc
Conference Date: 16-19 Sept. 1996 Conference Location: Lausanne, Switzerland
Language: English
Abstract: A Bayesian estimator of the **magnetic resonance** (MR) **velocity** image is proposed. It is based on a Markov model accounting for the spatial structure of the flow **velocity**. On the other hand, low MR signal intensity yields high uncertainty on the **velocity**. Such an important property is taken into account through the observation model. The resulting posterior likelihood is optimized using an iterative coordinate descent (ICD) algorithm. Compared to the usual least squares solution, simulation results on flows with parabolic and flat profiles demonstrate a significant gain of in the mean square error.
Subfile: A B C

18/3,AB/4 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

N/A TAF 1-20-2006

05881692 INSPEC Abstract Number: A9506-4780-001
Title: Bayesian analysis for quantitative **NMR** flow and diffusion imaging
Author(s): Da Xing; Gibbs, S.J.; Derbyshire, J.A.; Fordham, E.J.; Carpenter, T.A.; Hall, L.D.
Author Affiliation: Herchel Smith Lab. for Med. Chem., Cambridge Univ. Sch. of Clinical Med., UK
Journal: Journal of Magnetic Resonance, Series B vol.106, no.1 p. 1-9
Publication Date: Jan. 1995 Country of Publication: USA
ISSN: 1064-1866
U.S. Copyright Clearance Center Code: 1064-1866/95/$6.00
Language: English
Abstract: This study demonstrates the use of a **Bayesian** statistical **method** for data analysis in practical flow and diffusion measurements based on pulsed-field-gradient **magnetic-resonance imaging**. In addition to providing estimates of both the **velocity** and the diffusion coefficient at each voxel, the technique produces reliable fitting errors for these measurements. Bayesian analysis is especially useful, compared to the Fourier transform method, for treating noisy data which are truncated and/or sparsely and nonuniformly sampled in q, the wavevector for motion encoding. Nonuniform sampling in q is shown to be more efficient than uniform sampling for **velocity** and diffusion measurement; it can result in smaller fitting errors for the estimated parameters corresponding to fewer q samples and hence less data-acquisition time. The specific example of laminar **flow** of **water** in a straight cylindrical tube is illustrated with experimental and simulated data.
Subfile: A

18/3,AB/5 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

03774474 Genuine Article#: QE359 Number of References: 27
Title: BAYESIAN-ANALYSIS FOR QUANTITATIVE **NMR** FLOW AND DIFFUSION IMAGING (Abstract Available)
Author(s): XING D; GIBBS SJ; DERBYSHIRE JA; FORDHAM EJ; CARPENTER TA; HALL LD
Corporate Source: UNIV CAMBRIDGE,SCH CLIN MED,HERCHEL SMITH LAB MED CHEM,UNIV FORVIE SITE,ROBINSON WAY/CAMBRIDGE CB2 2PZ//ENGLAND/; UNIV CAMBRIDGE,SCH CLIN MED,HERCHEL SMITH LAB MED CHEM/CAMBRIDGE CB2 2PZ//ENGLAND/
Journal: JOURNAL OF MAGNETIC RESONANCE SERIES B, 1995, V106, N1 (JAN), P1-9
ISSN: 1064-1866
Language: ENGLISH Document Type: ARTICLE
Abstract: This study demonstrates the use of a **Bayesian** statistical **method** for data analysis in practical flow and diffusion measurements based on pulsed-held-gradient **magnetic-resonance imaging**. In addition to providing estimates of both the **velocity** and the diffusion coefficient at each voxel, the technique produces reliable fitting errors for these measurements. Bayesian analysis is especially useful, compared to the Fourier

transform method, for treating noisy data which are truncated and/or sparsely and nonuniformly sampled in q, the wavevector for motion encoding. Nonuniform sampling in q is shown to be more efficient than uniform sampling for **velocity** and diffusion measurement; it can result in smaller fitting errors for the estimated parameters corresponding to fewer q samples and hence less data-acquisition time. The specific example of laminar **flow** of **water** in a straight cylindrical tube is illustrated with experimental and simulated data.

N/A THF 1-20-2006

23/3,AB/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

13723954 PMID: 11378887
Bayesian technique for investigating linearity in event-related BOLD fMRI.
Kershaw J; Kashikura K; Zhang X; Abe S; Kanno I
Akita Laboratory, Japan Science and Technology Corporation, Akita City, Japan. len@akita-noken.go.jp
Magnetic resonance in medicine - official journal of the Society of Magnetic Resonance in Medicine / Society of Magnetic Resonance in Medicine (United States) Jun 2001, 45 (6) p1081-94, ISSN 0740-3194
Journal Code: 8505245
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
N/A TAP 1-20-2006
Event-related BOLD fMRI data is modeled as a linear time-invariant system. Together with Bayesian inference techniques, a statistical test is developed for rigorously detecting linearity/nonlinearity in the BOLD response system. The test is applied to data collected from eight subjects using an event-related paradigm with a switching checkerboard as the visual stimulus. Analyzed as a group, the results clearly find the response to be nonlinear. When each subject is analyzed individually, however, the results are predominantly nonlinear, but there is some evidence to suggest that there may be a crossover from a linear to a nonlinear regime and vice versa. This could be important when estimating physiological parameters for individuals. Additionally, estimates of the hemodynamic response function and corresponding response were obtained, but there was no consistent appearance of a poststimulus undershoot in the event-related BOLD response.

23/3,AB/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

N/A TAP 1-20-2006

12803978 PMID: 10725882
In vivo MR measurements of regional arterial and venous blood volume fractions in intact rat brain.
Duong T Q; Kim S G
Department of Radiology, University of Minnesota School of Medicine, Minneapolis 55455, USA.
Magnetic resonance in medicine - official journal of the Society of Magnetic Resonance in Medicine / Society of Magnetic Resonance in Medicine (UNITED STATES) Mar 2000, 43 (3) p393-402, ISSN 0740-3194
Journal Code: 8505245
Contract/Grant No.: NS10930; NS; NINDS; NS38295; NS; NINDS; RR08079; RR; NCRR
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
In vivo measurement of cerebral arterial and venous volume fractions is important to the understanding of brain physiology and function. By using an intravascular perfluorocarbon and 19F **NMR** at 4.7 T, regional

arterial and venous volume fractions from an intact rat brain were resolved based on the pseudodiffusion coefficients, which were (33 +/- 7) x 10(-3) and (0.45 +/- 0.13) x 10(-3) mm(2)/sec (mean +/- SD, n = 7) for the fast- and slow-moving component, respectively. By exploiting the linear dependence of the perfluorocarbon 19F 1/T1 on the dissolved paramagnetic oxygen concentration, combined inversion-recovery and diffusion measurements were made to correlate the short T1 (high-oxygenation) component with the fast-moving component and the long T1 (low-oxygenation) component with the slow-moving component. The arterial blood volume fraction was 29 +/- 7% of the total cerebral blood volume. Finally, experiments were performed in which different oxygen concentrations were inhaled to validate this technique.

23/3,AB/3 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

MATHF 1-22-06

08991585 INSPEC Abstract Number: A2004-14-8770E-052, B2004-07-7510N-091, C2004-07-7330-308

Title: Artery-vein detection in very noisy TOF angiographic volumes using dynamic feedback scale-space ellipsoidal filtering

Author(s): Suri, J.S.; Kecheng Liu; Kasuboski, L.; Singh, S.; Laxminarayan, S.

Author Affiliation: Div. of MR Clinical Res., Philips Medical Syst., Inc., Cleveland, OH, USA

Conference Title: Proceedings of the Fourth IASTED International Conference Signal and Image Processing p.565-71

Editor(s): Younan, N.

Publisher: ACTA Press, Anaheim, CA, USA

Publication Date: 2002 Country of Publication: USA vi+674 pp.

ISBN: 0 88986 340 7 Material Identity Number: XX-2002-01418

Conference Title: Proceedings of 4th IASTED International Conference on Signal and Image Processing

Conference Sponsor: IASTED

Conference Date: 12-14 Aug. 2002 Conference Location: Kaua'i, HI, USA

Language: English

Abstract: Pre-filtering is a critical step in 3-D segmentation of the **blood vessel** and its display. This paper presents a feedback scale-space approach for filtering the white blood angiographic volumes. The raw MR angiographic volume is first converted to isotropic volume followed by 3-D higher order separable Gaussian derivative convolution with known scales to generate edge volume. The edge volume is then run by the directional processor at each voxel where the eigenvalues of the 3-D ellipsoid are computed. The vessel score per voxel is then estimated based on these three eigenvalues which suppress the non-vasculature and background structures yielding the filtered volume. The filtered volume is then scale-space thresholded using a dynamic threshold which is computed using a combination of Bayesian threshold and a scale-dependent decay function. For complete capture of the vessels in the volume, the scales are made to increase from sigma min to sigma max and then optimized. For each scale, a new threshold is computed thereby making the system design dynamic. The increasing scales to capture thick vessels uses this dynamic threshold each time the scale changes, hence is dynamic to the changing input scale. We demonstrate this system for cartoids in a very noisy data set on white blood angiography volumes. We qualitatively and quantitatively measure the performance of the system by computing the MIPs and SNR/CNRs. We run our system over more than 20 patient studies.

Subfile: A B C

23/3,AB/4 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

08729449 INSPEC Abstract Number: A2003-20-8745-051, B2003-10-7510N-033, C2003-10-7330-226

Title: Hemodynamic segmentation of MR brain perfusion images using independent component analysis, thresholding, and Bayesian estimation

Author(s): Yi-Hsuan Kao; Wan-Yuo Guo; Yu-Te Wu; Kuo-Ching Liu; Wen-Yen Chai; Chiao-Yuan Lin; Yi-Shuan Hwang; Liou, A.J.-K.; Hsiu-Mei Wu; Hui-Cheng Cheng; Tzu-Chen Yeh; Jen-Chuen Hsieh; Teng, M.M.H.

Author Affiliation: Inst. of Radiol. Sci., Nat. Yang-Ming Univ., Taipei, Taiwan

Journal: Magnetic Resonance in Medicine vol.49, no.5 p.885-94

Publisher: Wiley,

Publication Date: May 2003 Country of Publication: USA

CODEN: MRMEEN ISSN: 0740-3194

SICI: 0740-3194(200305)49:5L.885:HSBP;1-K

Material Identity Number: K620-2003-005

U.S. Copyright Clearance Center Code: 0740-3194/03/$3.00

Language: English

N/A IAP 1-20-2006

Abstract: Dynamic-susceptibility-contrast MR perfusion imaging is a widely used imaging tool for in vivo study of cerebral blood perfusion. However, visualization of different hemodynamic compartments is less investigated. In this work, independent component analysis, thresholding, and Bayesian estimation were used to concurrently segment different tissues, i.e., artery, gray matter, white matter, vein and sinus, choroid plexus, and cerebral spinal fluid, with corresponding signal-time curves on perfusion images of five normal volunteers. Based on the spatiotemporal hemodynamics, sequential passages and microcirculation of contrast-agent particles in these tissues were decomposed and analyzed. Late and multiphasic perfusion, indicating the presence of contrast agents, was observed in the choroid plexus and the cerebral spinal fluid. An arterial input function was modeled using the concentration-time curve of the arterial area on the same slice, rather than remote slices, for the deconvolution calculation of relative cerebral **blood flow**.

Subfile: A B C

23/3,AB/5 (Item 3 from file: 2)
DIALOG(R)File 2:INSPEC

08291217 INSPEC Abstract Number: A2002-14-8760I-024, B2002-07-7510N-054, C2002-07-7330-178

Title: Evidential value of post mortem **MRI** in forensic pathology

Author(s): Schweitzer, W.; Schaepman, M.; Ith, M.; Brugger, K.; Thali, M.; Dornhofer, T.; Tiefenthaler, K.; Scheurer, E.; Vock, P.; Boesch, C.; Dirnhofer, R.

Author Affiliation: Inst. fuer Rechtsmedizin - Forensic Medicine, Bern Univ., Switzerland

Journal: Proceedings of the SPIE - The International Society for Optical Engineering Conference Title: Proc. SPIE - Int. Soc. Opt. Eng. (USA) vol.4321 p.404-8

Publisher: SPIE-Int. Soc. Opt. Eng,

Publication Date: 2001 Country of Publication: USA

CODEN: PSISDG ISSN: 0277-786X

SICI: 0277-786X(2001)4321L.404:EVPM;1-L
Material Identity Number: C574-2001-225
U.S. Copyright Clearance Center Code: 0277-786X/01/$15.00
Conference Title: Medical Imaging 2001: Physiology and Function from Multidimensional Images
Conference Sponsor: SPIE
Conference Date: 18-20 Feb. 2001 Conference Location: San Diego, CA, USA
Language: English
Abstract: We currently evaluate **MRI** as add-on to dissection. Cases can only build on high evidential values of morphological findings as estimated using Bayesian likelihood-ratios. These values may vary among different cases depending on the quality of the morphology and the discrete hypotheses to be discerned. After scanning 20 bodies using **MRI** admitted to our institute for autopsy, we reconstructed selected imaging findings from a couple of illustrative cases according to a geometrical model ("Pink Box") designed as an object oriented bridging protocol to enable comparison of autopsy and **MRI** data. Although it appears obvious that "three-dimensional imaging yields relevant diagnoses", comparison of selected findings suggests, that the real evidential value of a postmortem scan depends on basic geometrical features of tissue structures examined. (1) Tissue surfaces are difficult to examine in **MRI** , including surface features of contact wounds in firearm injuries, lacerations of the pleura, or skin needle marks. (2) Specificity and sensitivity of solid tissue block data depend on contrast and resolution. (3) Tunnels or tubes, such as coronary arteries, linear wound tracks or the aorta offer more degrees of freedom for reconstruction, including spatial reconstruction or cross sectioning in different directions. (4) Three-dimensional rendering of complex objects results in spectacular images. Their evidential value is dependent on the way thresholding of 2D slices is validated. We present illustrative examples which suggest that a possible integration of non-invasive imaging methods into Forensic Pathology in fact need to take basic geometry into consideration when discussing evidential value.
Subfile: A B C

N/A TAFE 1-20-2006

23/3,AB/6 (Item 4 from file: 2)
DIALOG(R)File 2:INSPEC

08161616 INSPEC Abstract Number: B2002-02-7510H-056, C2002-02-7330-401
Title: Estimating sparse deformation fields using multiscale Bayesian priors and 3-D ultrasound
Author(s): King, A.P.; Batchelor, P.G.; Penney, G.P.; Blackall, J.M.; Hill, D.L.G.; Hawkes, D.J.
Author Affiliation: Guy's King's & St. Thomas' Schools of Medicine & Dentistry, Guy's Hosp., London, UK
Conference Title: Information Processing in Medical Imaging. 17th International Conference, IPMI 2001. Proceedings (Lecture Notes in Computer Science Vol.2082) p.155-61
Editor(s): Insana, M.F.; Leahy, R.M.
Publisher: Springer-Verlag, Berlin, Germany
Publication Date: 2001 Country of Publication: Germany xvi+537 pp.
ISBN: 3 540 42245 5 Material Identity Number: XX-2001-02088
Conference Title: Information Processing in Medical Imaging. 17th International Conference, IPMI 2000. Proceedings
Conference Date: 18-22 June 2001 Conference Location: Davis, CA, USA
Language: English

Abstract: Presents an extension to the standard Bayesian image analysis paradigm to explicitly incorporate a multiscale approach. This new technique is demonstrated by applying it to the problem of compensating for soft-tissue deformation of pre-segmented surfaces for image-guided surgery using 3D ultrasound. The solution is regularised using knowledge of the mean and Gaussian curvatures of the surface estimate. Results are presented from testing the method on ultrasound data acquired from a volunteer's liver. Two structures were segmented from an **MRI** scan of the volunteer: the liver surface and the portal vein. Accurate estimates of the deformed surfaces were successfully computed using the algorithm, based on prior probabilities defined using a minimal amount of human intervention. With a more accurate prior model, this technique has the possibility to completely automate the process of compensating for intra-operative deformation in image-guided surgery.

N/A TAF 1-20-2006

Subfile: B C

23/3,AB/7 (Item 5 from file: 2)

DIALOG(R)File 2:INSPEC

Not Flow across the Blood Vessel

Not Motion Intentional Parameterized MRI

Data

N/A TAF 1-20-2006

05802327 INSPEC Abstract Number: A9423-8770E-013, B9412-7510B-032, C9412-7330-029

Title: Continuous voxel classification by stochastic relaxation: theory and application to **MR imaging** and MR angiography

Author(s): Vandermeulen, D.; Verbeeck, R.; Berben, L.; Delaere, D.; Suetens, P.; Marchal, G.

Author Affiliation: Lab. for Med. Imaging Res., Univ. Hospital Gasthuisberg, Leuven, Belgium

Journal: Image and Vision Computing vol.12, no.9 p.559-72

Publication Date: Nov. 1994 Country of Publication: UK

CODEN: IVCODK ISSN: 0262-8856

U.S. Copyright Clearance Center Code: 0262-8856/94/09/0559-14$10.00

Language: English

Abstract: In this paper we present a stochastic relaxation method for voxel classification in **magnetic resonance** (**MR**) **images**. This method is based on **Bayesian** decision **theory**. In this framework, the optimal classification corresponds to the minimum of an objective function, which is here defined as the expected number of misclassified voxels. The objective function encodes constraints according to two a priori models: the scene model and the camera model. The scene model reflects a priori knowledge of anatomy and morphology; the camera model relates observed **MR-image** intensities to anatomical objects. Both models are described using the concept of Markov random fields (MRF). This allows continuity and local contextual constraints to be easily modelled via the associated Gibbs Potential Functions. The minimum of the objective function is approximated asymptotically by stochastically sampling the associated Gibbs posterior joint probability distribution. The method is applied to brain tissue classification in **MRI** and **blood vessel** classification in MR angiograms. Each application contains a novel aspect: in the former, we introduce topological constraints on neighbouring tissues; in the latter, we incorporate shape constraints on cylindrical structures.

Subfile: A B C

23/3,AB/8 (Item 1 from file: 73)

DIALOG(R)File 73:EMBASE

12066513 EMBASE No: 2003177913

Hemodynamic segmentation of MR brain perfusion images using independent component analysis, thresholding, and Bayesian estimation

Kao Y.-H.; Guo W.-Y.; Wu Y.-T.; Liu K.-C.; Chai W.-Y.; Lin C.-Y.; Hwang Y.-S.; Liou A.J.-K.; Wu H.-M.; Cheng H.-C.; Yeh T.-C.; Hsieh J.-C.; Teng M.M.H.

Dr. Y.-T. Wu, Institute of Radiological Science, National Yang-Ming University, Section 2, No. 155, Li-Nong Street, Pei-Tou, Taipei 112 Taiwan

AUTHOR EMAIL: ytwu@ym.edu.tw

Magnetic Resonance in Medicine (MAGN. RESON. MED.) (United States) 01 MAY 2003, 49/5 (885-894)

CODEN: MRMEE ISSN: 0740-3194

DOCUMENT TYPE: Journal ; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 38

MA TAP 1-20-2006

Dynamic-susceptibility-contrast MR perfusion imaging is a widely used imaging tool for in vivo study of cerebral blood perfusion. However, visualization of different hemodynamic compartments is less investigated. In this work, independent component analysis, thresholding, and Bayesian estimation were used to concurrently segment different tissues, i.e., artery, gray matter, white matter, vein and sinus, choroid plexus, and cerebral spinal fluid, with corresponding signal-time curves on perfusion images of five normal volunteers. Based on the spatiotemporal hemodynamics, sequential passages and microcirculation of contrast-agent particles in these tissues were decomposed and analyzed. Late and multiphasic perfusion, indicating the presence of contrast agents, was observed in the choroid plexus and the cerebral spinal fluid. An arterial input function was modeled using the concentration-time curve of the arterial area on the same slice, rather than remote slices, for the deconvolution calculation of relative cerebral **blood flow**. (c) 2003 Wiley-Liss, Inc.

23/3,AB/9 (Item 1 from file: 34)

DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

10027612 Genuine Article#: 477QR Number of References: 23

Title: Analysis of contrast-enhanced dynamic **MR images** of the lung (ABSTRACT AVAILABLE)

Author(s): Torheim G (REPRINT) ; Amundsen T; Rinck PA; Haraldseth O; Sebastiani G

Corporate Source: RiT,Med Sect, MR Ctr,N-7006 Trondheim//Norway/ (REPRINT); Norwegian Univ Sci & Technol,Dept Anesthesia & Med Imaging,N-7034 Trondheim//Norway/

Journal: JOURNAL OF MAGNETIC RESONANCE IMAGING, 2001, V13, N4 (APR), P 577-587

ISSN: 1053-1807 Publication date: 20010400

Publisher: JOHN WILEY & SONS INC, 605 THIRD AVE, NEW YORK, NY 10158-0012 USA

Language: English Document Type: ARTICLE

Abstract: Recent studies have demonstrated the potential of dynamic contrast-enhanced **magnetic resonance Imaging** (**MRI**) describing pulmonary perfusion. However, breathing motion, susceptibility artifacts, and a low signal-to-noise ratio (SNR) make automatic pixel-by-pixel analysis difficult. In the present work, we propose a novel method to compensate for breathing motion. In order to test the feasibility of this method, we enrolled 53 patients with

pulmonary embolism (N = 24), chronic obstructive pulmonary disease (COPD) (N = 14), and acute pneumonia (N = 15). A crucial part of the method, an automatic diaphragm detection algorithm, was evaluated in all 53 patients by two Independent observers. The accuracy of the method to detect the diaphragm showed a success rate of 92%. Furthermore, a Bayesian noise reduction technique was implemented and tested. This technique significantly reduced the noise level without removing important clinical information. In conclusion, the combination of a motion correction **method** and a **Bayesian** noise reduction **method** offered a rapid, semiautomatic pixel-by-pixel analysis of the lungs with great potential for research and clinical use. (C) 2001 Wiley-Liss, Inc.

N/A TAF 1-20-2006

23/3,AB/10 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

10003486 Genuine Article#: 473ZT Number of References: 39
Title: Bayesian approach to segmentation of statistical parametric maps (ABSTRACT AVAILABLE)
Author(s): Rajapakse JC (REPRINT) ; Piyaratna J
Corporate Source: Nanyang Technol Univ,Sch Comp Engn,Block N4,Nanyang Ave/Singapore 639798//Singapore/ (REPRINT); Nanyang Technol Univ,Sch Comp Engn,Singapore 639798//Singapore/
Journal: IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING, 2001, V48, N10 (OCT) , P1186-1194
ISSN: 0018-9294 Publication date: 20011000
Publisher: IEEE-INST ELECTRICAL ELECTRONICS ENGINEERS INC, 345 E 47TH ST, NEW YORK, NY 10017-2394 USA
Language: English Document Type: ARTICLE
Abstract: A contextual segmentation technique to detect brain activation from functional brain images is presented in the Bayesian framework. Unlike earlier similar approaches [Holmes and Ford (1993) and Descombes et al. (1998)], a Markov random field (MRF) is used to represent configurations of activated brain voxels, and likelihoods given by statistical parametric maps (SPM's) are directly used to find the maximum a posteriori (MAP) estimation of segmentation. The iterative segmentation algorithm, which is based on a simulated annealing scheme, is fully data-driven and capable of analyzing experiments involving multiple-input stimuli. Simulation results and comparisons with the simple thresholding and the statistical parametric mapping (SPM) approaches are presented with synthetic images, and functional **MR images** acquired in memory retrieval and event-related working memory tasks. The experiments show that an MRF is a valid representation of the activation patterns obtained in functional brain images, and the present technique renders a superior segmentation scheme to the context-free approach and the SPM approach.

N/A TAF 1-20-2006

23/3,AB/11 (Item 3 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

05068436 Genuine Article#: TN513 Number of References: 130
Title: DECISION-ANALYSIS IN THE CLINICAL NEUROSCIENCES - A SYSTEMATIC REVIEW OF THE LITERATURE (Abstract Available)
Author(s): DIPPEL DWJ; HABBEMA JDF
Corporate Source: ERASMUS UNIV ROTTERDAM,FAC MED,DEPT PUBL HLTH,CTR CLIN DECIS SCI/3000 DR ROTTERDAM//NETHERLANDS/; UNIV HOSP DIJKZIGT,DEPT

NEUROL/3015 GD ROTTERDAM//NETHERLANDS/
Journal: EUROPEAN JOURNAL OF NEUROLOGY, 1995, V2, N6 (DEC), P523-539
ISSN: 1351-5101
Language: ENGLISH Document Type: REVIEW
Abstract: Clinical decision analysis can be a useful scientific tool for individual patient management, for planning of clinical research and for reaching consensus about clinical problems. We systematically reviewed the decision analytic studies in the clinical neurosciences that were published between 1975 and July 1994. All studies were assessed on aspects of clinical applicability: presence of case and context description, completeness of the analysed strategies from a clinical point of view extendibility of the analyses to different patient profiles, and up-to-date-ness. Fifty-nine decision analyses of twenty-eight different clinical problems were identified. Twenty-eight analyses were based on the theory of subjective expected utility, twelve on cost-effectiveness analysis. Four studies used ROC analysis, and fifteen were risk-, or risk-benefit analyses, At least sig studies could have been improved by more elaborately disclosing the context of the clinical problem that was addressed. In eleven studies, the effect of different, yet plausible assumptions was not explored, and in eighteen studies the reader was not informed how to extend the results of the analysis to patients with (slightly) different clinical characteristics. All studies had, by nature, the potential to promote insight into the clinical problem and focus the discussion on clinically important aspects, and gave clinically useful advice, We conclude that clinical decision analysis, as an explicit, quantitative approach to uncertainty in decision making in the clinical neurosciences will fulfill a growing need in the near future.

N/A PAF
1-20-2006

23/3,AB/12 (Item 4 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

03714435 Genuine Article#: PZ976 Number of References: 19
Title: INCORPORATION OF CORRELATED STRUCTURAL IMAGES IN PET IMAGE-RECONSTRUCTION (Abstract Available)
Author(s): OUYANG X; WONG WH; JOHNSON VE; HU XP; CHEN CT
Corporate Source: UNIV CALIF SAN FRANCISCO,DEPT RADIOL/SAN FRANCISCO//CA/94143; UNIV CHICAGO,DEPT STAT/CHICAGO//IL/60637; DUKE UNIV,INST STAT & DECIS SCI/DURHAM//NC/27706; UNIV MINNESOTA,DEPT RADIOL/MINNEAPOLIS//MN/55455; UNIV CHICAGO,DEPT RADIOL/CHICAGO//IL/60637
Journal: IEEE TRANSACTIONS ON MEDICAL IMAGING, 1994, V13, N4 (DEC), P 627-640
ISSN: 0278-0062
Language: ENGLISH Document Type: ARTICLE
Abstract: We report on a new method in which spatially correlated **magnetic resonance** (MR) or X-ray computed tomography (CT) images are employed as a source of prior information in the Bayesian reconstruction of positron emission tomography (PET) images. This new method incorporates the correlated structural images as anatomic templates which can be used for extracting information about boundaries that separate regions exhibiting different tissue characteristics. In order to avoid the possible introduction of artifacts caused by discrepancies between functional and anatomic boundaries, we propose a new method called the ''weighted line site'' method, in which a prior structural image is employed in a modified updating scheme for the boundary variable used in the iterative Bayesian reconstruction. This modified scheme is based on the joint probability of structural and

functional boundaries. As to the structural information provided by CT or **MR images**, only those which have high joint probability with the corresponding PET data are used; whereas other boundary information that is not supported by the PET image is suppressed. The new method has been validated by computer simulation and phantom studies. The results of these validation studies indicate that this new method offers significant improvements in image quality when compared to other reconstruction algorithms, including the filtered backprojection (FBP) method and the maximum likelihood (ML) approach, as well as the **Bayesian method** without the use of the prior boundary information.

N/A TAF 1-20-2006

28/3,AB/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

017109381
WPI Acc No: 2005-433724/200544
XRAM Acc No: C05-133111
XRPX Acc No: N05-351930
Rotational pulsation system for communicating in wellbore comprises rotor having turbine blades, centralizer having coil and stator package to communicate with permanent magnets, rotational and static screen disks at the rotor
Patent Assignee: LEHR J (LEHR-I); BAKER HUGHES INC (BAKO)
Inventor: LEHR J
Number of Countries: 108 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20050117453	A1	20050602	US 2003725353	A	20031201	200544	B
WO 200554903	A1	20050616	WO 2004US39584	A	20041124	200544	

Priority Applications (No Type Date): US 2003725353 A 20031201
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20050117453	A1		15	H04H-009/00	
WO 200554903	A1	E		G01V-011/00	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

NHA/AF 1-20-2006

Abstract (Basic): US 20050117453 A1
Abstract (Basic):

NOVELTY - A rotational pulsation system comprises a rotor (32) having permanent magnets (36, 38); a turbine (34) having blades to drive the rotor; a centralizer (14) having coils (16) and a stator package (18) positioned to operably communicate with the magnets; a rotational screen disk (48) disposed at the rotor; a static screen disk (50) disposed at the rotation screen disk; and a guide (60) having blades (62).

DETAILED DESCRIPTION - The coils are electrically attached to a load controller. The system creates a pulse in a **fluid flowing** at a frequency, which is adjustable by varying an electrical load placed upon the coils.

USE - In a communication arrangement for communicating in a wellbore (claimed).

ADVANTAGE - The frequency and **phase shift** of each system outputs are measured and corrected to ensure constructed interference to increase the amplitude of the signal generated and hence increasing the signal clarity at remote location. The higher data rates can be obtained using the individual frequency pairs and additionally, cross-channel transmission using difference between the individual frequency pairs.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-section view of the rotational pulsation system.

rotational pulsation system (10)
centralizer (14)

coils (16)
stator package (18)
rotor (32)
turbine (34)
permanent magnets (36, 38)
rotational screen disk (48)
static screen disk (50)
guide (60)
blades of guide. (62)
pp; 15 DwgNo 1/8

28/3,AB/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016775454
WPI Acc No: 2005-099732/200511
XRAM Acc No: C05-033371
XRPX Acc No: N05-086593
Determination of e.g. fluid mobility, for fluids in porous media by applying pressure gradient to create motion of fluids in porous media, and measuring **nuclear magnetic resonance** signal response in response to applied pressure gradient
Patent Assignee: THOMANN H (THOM-I); ZHOU M (ZHOU-I); EXXONMOBIL RES & ENG CO (ESSO)
Inventor: THOMANN H; ZHOU M
Number of Countries: 108 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20050007109	A1	20050113	US 2003485000	P	20030703	200511	B
			US 2004871115	A	20040618		
WO 200508187	A2	20050127	WO 2004US21351	A	20040702	200511	
US 6933719	B2	20050823	US 2003485000	P	20030703	200556	
			US 2004871115	A	20040618		

Priority Applications (No Type Date): US 2003485000 P 20030703; US 2004871115 A 20040618
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20050007109	A1		11	G01V-003/00	Provisional application US 2003485000
WO 200508187	A2	E		G01F-000/00	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

US 6933719	B2			G01V-003/00	Provisional application US 2003485000

Abstract (Basic): US 20050007109 A1
Abstract (Basic):
NOVELTY - **Fluid flow** properties for **fluids** in porous media are determined by applying a pressure gradient to create motion of fluids in the porous media; measuring **nuclear magnetic resonance** signal response in response to the applied pressure gradient, where the response is the difference of

signal with and without the acoustic stimulation; and determining a **fluid flow** property of the porous medium based on the difference.

DETAILED DESCRIPTION - Determination of **fluid flow** properties for **fluids** in porous media by applying a pressure gradient to create motion of the fluids in the porous media; measuring **nuclear magnetic resonance** signal response including relaxation rate and/or **phase shift** in response to the applied pressure gradient, where the response is the difference of the signal with and without the acoustic stimulation, at offset positions within the porous medium away from an external surface; and determining a **fluid flow** property of the porous medium based on the difference.

USE - Used for determining **fluid flow** properties, e.g. fluid mobility, permeability, fluid viscosity, or relative permeability, for fluids in porous media (claimed).

ADVANTAGE - The process determines **fluid flow velocities** in the reservoir rock in the presence of a known pressure gradient. The analysis of the data to determine permeability does not require assumptions about bulk flow into the borehole such as required for the analysis of well test and formation micro-test data. The measurement is made using a wire line tool under continuous logging conditions so that data over large reservoir intervals are obtained.

DESCRIPTION OF DRAWING(S) - The figure is a labeled schematic view of the simulated **NMR** measurement.

pp; 11 DwgNo 1/4

N/A TAF 1-20-2006

28/3,AB/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016561950
WPI Acc No: 2004-720687/200471
XRAM Acc No: C04-253966
XRPX Acc No: N04-571384

Acoustic telemetry apparatus for communicating digital data from down-hole location through borehole to surface, comprises acoustic channel terminated at down-hole end, acoustic wave generator, modulator, and sensor(s)

Patent Assignee: SCHLUMBERGER HOLDINGS LTD (SLMB); HACKWORTH M (HACK-I); HUANG S (HUAN-I); JOHNSON C (JOHN-I); MONMONT F (MONM-I); TENNENT R (TENN-I); PRAD RES & DEV NV (PRAD-N); SCHLUMBERGER CANADA LTD (SLMB); SCHLUMBERGER OILFIELD ASSISTANCE LTD (SLMB); SCHLUMBERGER OVERSEAS SA (SLMB); SCHLUMBERGER SEACO INC (SLMB); SCHLUMBERGER SURENCO SA (SLMB); SCHLUMBERGER TECHNOLOGY BV (SLMB); SERVICES PETROLIERS SCHLUMBERGER (SLMB)

Inventor: HUANG S; MONMONT F; TENNENT R; HACKWORTH M; JOHNSON C
Number of Countries: 108 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
GB 2399921	A	20040929	GB 20036929	A	20030326	200471	B
WO 200485796	A1	20041007	WO 2004GB1281	A	20040324	200471	
US 20050168349	A1	20050804	WO 2004GB1281	A	20040324	200552	
			US 200417631	A	20041220		

Priority Applications (No Type Date): GB 20036929 A 20030326
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
GB 2399921	A		40	E21B-047/12	

WO 200485796 A1 E E21B-047/18
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
US 20050168349 A1 G01V-003/00 Cont of application WO 2004GB1281

Abstract (Basic): GB 2399921 A
Abstract (Basic):

NOVELTY - An acoustic telemetry apparatus comprises acoustic channel terminated at a down-hole end through a reflecting terminal, acoustic wave generator located at the surface, modulator located at the down-hole location, and sensor(s) (150) located at the surface adapted to detect amplitude and/or phase related information of acoustic waves traveling in the acoustic channel.

DETAILED DESCRIPTION - An acoustic telemetry apparatus comprises acoustic channel terminated at a down-hole end through a reflecting terminal, acoustic wave generator located at the surface and providing an acoustic wave carrier signal in the acoustic channel, modulator located at the down-hole location and adapted to modulate amplitude and/or phase of the carrier wave in response to a digital signal, and sensor(s) located at the surface to detect amplitude and/or phase related information of acoustic waves traveling in the acoustic channel.

INDEPENDENT CLAIMS are also included for the following:

(a) communicating digital camera from a down-hole location through a borehole to the surface comprising establishing an acoustic channel through the borehole and terminating the acoustic channel at a downhole end through a reflecting terminal, generating from the surface an acoustic wave carrier signal in the acoustic channel, modulating amplitude and/or phase of the carrier wave in response to a digital signal, and detecting at the surface amplitude and/or phase related information of acoustic waves traveling in the acoustic channel; and

(b) stimulating a wellbore (110) comprising performing operations designed to improve the production of wellbore while simultaneously establishing an acoustic channel through the borehole and terminating acoustic channel at a down-hole end through a reflecting terminal, generating from the surface an acoustic wave carrier signal through the acoustic channel, modulating amplitude and/or phase of carrier wave in response to a digital signal, and detecting at the surface amplitude and/or phase related information of acoustic waves traveling in the acoustic channel.

USE - Used for communicating digital data from a down-hole location through a borehole to the surface. It is also used in a well stimulation operation. (All claimed)

ADVANTAGE - The apparatus allows the communication of data between a down-hole location and surface location. It enables down-hole measurements to be performed simultaneously with the resulting measurements being encoded into a digital bit stream that is subsequently used to modulate the carrier wave.

DESCRIPTION OF DRAWING(S) - The figure illustrates elements of an acoustic telemetry system.

Wellbore (110)
Casing (111)
Tubing string (120)
Annulus (130)

N/A MF 1-20-2006

Pipe (131)
Lower and upper packers (133, 134)
Pump system (140)
Piston (141)
Drive unit (142)
Sensor (150)
pp; 40 DwgNo 1/8

28/3,AB/4 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015404741
WPI Acc No: 2003-466882/200344
Related WPI Acc No: 2002-740132; 2004-201457; 2004-363964
XRAM Acc No: C03-124507
XRPX Acc No: N03-371449
Mud pulse telemetry system for modulating pressure of drilling fluid in wellbore, includes drill string, non-rotating stator, rotor, and motor driver gear system
Patent Assignee: BAKER HUGHES INC (BAKO)
Inventor: EGGERS H; HAHN D; PETERS V; ROUATBI C
Number of Countries: 001 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030056985	A1	20030327	US 2001794964	A	20010227	200344 B
			US 2002223169	A	20020819	
US 6975244	B2	20051213	US 2001794964	A	20010227	200581
			US 2002223169	A	20020819	

Priority Applications (No Type Date): US 2002223169 A 20020819; US 2001794964 A 20010227
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20030056985	A1		29	C09K-007/00	CIP of application US 2001794964
US 6975244	B2			E21B-047/18	CIP of application US 2001794964
					CIP of patent US 6626253

Abstract (Basic): US 20030056985 A1
Abstract (Basic):
NOVELTY - A mud pulse telemetry system comprises a drill string (9) having a drilling fluid (31), a non-rotating stator having flow passages, a rotor having flow passages, and a motor driver gear system for generating pressure fluctuations in the drilling fluid.
DETAILED DESCRIPTION - A mud pulse telemetry system comprises a drill string having a drilling fluid, and extending in a borehole from a drilling rig to a downhole location; a non-rotating stator in the **flowing** drilling **fluid**, and having **flow** passages to **channel** the drilling **fluid**; a rotor in the **flowing** drilling **fluid** proximate the stator, and having flow passages; and a motor driver gear system adapted to drive the rotor in a rotationally oscillating manner for generating pressure fluctuations in the drilling fluid.
An INDEPENDENT CLAIM is also included for providing a high data rate in a mud pulse telemetry multivalent encoding scheme.
USE - Used for modulating the pressure of a drilling fluid circulating in a drill string within a wellbore.
ADVANTAGE - The system prevents wear, fatigue, and failure in its operating part.

N/A AF 1-20-2006

DESCRIPTION OF DRAWING(S) - The figure shows a schematic diagram of the drilling rig.
Drill string (9)
Drilling fluid (31)
pp; 29 DwgNo 1/14

28/3,AB/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013216009
WPI Acc No: 2000-387883/200033
XRPX Acc No: N00-290327
Magnetic resonance based **fluid flow** measurement, for measuring cerebral spinal fluid produced in human brain, comprises generating respective additional RF pulse near a corresponding phase of **fluid flow** period
Patent Assignee: KONINK PHILIPS ELECTRONICS NV (PHIG); US PHILIPS CORP (PHIG)
Inventor: VAN DEN BRINK J S; VAN DER MEULEN P
Number of Countries: 021 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200029864	A1	20000525	WO 99EP8630	A	19991109	200033	B
EP 1047953	A1	20001102	EP 99958016	A	19991109	200056	
			WO 99EP8630	A	19991109		
US 6438404	B1	20020820	US 99442961	A	19991118	200257	
JP 2002530131	W	20020917	WO 99EP8630	A	19991109	200276	
			JP 2000582815	A	19991109		

N/A TAF 1-20-2006

Priority Applications (No Type Date): EP 98203883 A 19981118
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200029864	A1	E	28	G01R-033/563	
Designated States (National): JP					
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE					
EP 1047953	A1	E		G01R-033/563	Based on patent WO 200029864
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE					
US 6438404	B1			A61B-005/055	
JP 2002530131	W		30	A61B-005/055	Based on patent WO 200029864

Abstract (Basic): WO 200029864 A1
Abstract (Basic):
NOVELTY - Additional gradients are applied in order to shift the phase of reference magnetization. An excitation RF pulse is generated near phase of a period of **fluid flow**, when an additional gradient is applied to generate an additional RF pulse. Another additional RF pulse is generated near a corresponding phase of another period of the **fluid flow**, when an additional gradient is applied.
DETAILED DESCRIPTION - The **phase shift** of the reference magnetization relates to the net **flow** of the **fluid** during an interval between the application of the **gradients**. The **fluid flow** varies with the period which corresponds to a period of one cardiac cycle of a human or animal to be examined.
An INDEPENDENT CLAIM is also included for a **magnetic resonance imaging** device.

USE - For measuring periodically varying cerebral spinal fluid produced in the human brain for diagonizing neuro-degenerative disease.

ADVANTAGE - The efficient measurement of net displacement of the periodically varying fluid is enabled .

DESCRIPTION OF DRAWING(S) - The figure shows the imaging pulse sequence obtained during measurement of periodically varying **fluid flow.**

pp; 28 DwgNo 3/4

28/3,AB/6 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX

010048584
WPI Acc No: 1994-316295/199439
XRPX Acc No: N94-248416

Magnetic resonance imaging apparatus for imaging vessel structures using phase contrast angiography - predetermines sets of pulse sequences corresponding to moment vectors which impart phase shift to moving spin, acquires echo data by implementing pulse sequences and generates image data of moving spin using flow related value

Patent Assignee: TOSHIBA KK (TOKE)
Inventor: MACHIDA Y
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5352980	A	19941004	US 9322956	A	19930225	199439	B

Priority Applications (No Type Date): JP 9241440 A 19920227
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5352980	A		11	G01V-003/00	

Abstract (Basic): US 5352980 A

The MR imaging apparatus comprises a design unit for designing four sets of pulse sequences with four moment vectors, especially four first moment vectors, which can impart a phase shift to the moving spins, an acquiring unit for acquiring echo data by implementing the designed pulse sequences, a calculating unit for calculating a flow-related value of the moving spin, especially, a flow velocity using the echo data and a generating unit for generating image data of the moving spin using the calculated flow velocity.

The first moment vectors correspond to four vertices of a tetrahedron respectively located in a 3-D moment space, a centre of which coincides with an origin of the 3-D moment space.

ADVANTAGE - Can distinguish flowing blood from surrounding stationary tissue.

Dwg.3/8

N/A THF 1-20-2006

33/3,AB/1 (Item 1 from file: 987)
DIALOG(R)File 987:TULSA (Petroleum Abs)

00978753 PETROLEUM ABSTRACTS NO.: 716986
SIGNAL RECOGNITION SYSTEM FOR WELLBORE TELEMETRY
AUTHOR (INVENTOR): JEFFRYES B P; JERVIS T T
PATENT ASSIGNEE: SCHLUMBERGER TECHNOL CORP
PATENT INFORMATION: US 5955966, C 9/21/1999, F 4/9/1997 (APPL 838557) (G01V-003/00) (11 PP; 23 CLAIMS)
PATENT (NO, DATE): US 5955966 19990921
APPLICATION (NO, DATE): US 838557 19970409
PUBLICATION YEAR: 1999
IPC CODE: **G01V-003/00**
LANGUAGE: ENGLISH

N/A TAF 1-20-2006

Methods and an apparatus are described for recognizing well-bore telemetry signals, wherein a received analog telemetry signal is compared to a number of possible analog signals. The probability of representing the received signal is determined for each of the possible analog signals. By selecting the signal with the highest probability, the received signal is demodulated. For calculating the probability, **Bayes' method** or any equivalent thereof is used. In variants, this probabilistic method is used to determine the synchronization point of the telemetry signal and for controlling the noise removal therefrom. The method and apparatus show increased accuracy in recognizing and demodulating the received signals

33/3,AB/2 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

Applicants own work of the Instant Application N/A TAF 1-20-2006

016653978
WPI Acc No: 2004-812698/200480
XRPX Acc No: N04-641281
Magnetic resonance imaging flow parameter estimating method for medical diagnosis, involves resolving magnetic imaging data with respect to magnetic resonance imaging model, using conditional probabilities based on **Bayes` Theorem**
Patent Assignee: INGUVA R (INGU-I); MADARASZ F L (MADA-I)
Inventor: INGUVA R; MADARASZ F L
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20040217760	A1	20041104	US 2000181823	P	20000211	200480 B
			US 2001781035	A	20010209	

Priority Applications (No Type Date): US 2000181823 P 20000211; US 2001781035 A 20010209
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20040217760	A1		11	G01V-003/00	Provisional application US 2000181823

Abstract (Basic): US 20040217760 A1
Abstract (Basic):

NOVELTY - The method involves accessing magnetic resonance imaging data and providing a magnetic resonance imaging model function. The magnetic imaging data is resolved with respect to the magnetic resonance imaging model using conditional probabilities based on **Bayes` Theorem**. The probabilities are compared for two noise models and determining which noise model of the two noise models

is better.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a system for flow parameter estimates in magnetic resonance imaging.

USE - Used for estimating a flow parameter in magnetic resonance imaging that provides information about anatomical structure, enables quantitative anatomical studies of diseases, derivation of computerized anatomical atlases, and three-dimensional visualization of internal anatomy that is utilized for pre-operative and intra-operative visualization, and in the guidance of therapeutic intervention.

ADVANTAGE - The method facilitates for resolving the magnetic imaging data, using conditional probabilities based on **Bayes` Theorem**, thus providing higher resolution and detail flow parameters for smaller/ deeper vessels.

DESCRIPTION OF DRAWING(S) - The drawing shows an overview of a magnetic resonance imaging system.

Computer system (114)
Spectrometer (126)
Front-end-controller (128)
Power amplifier (134)
Waveform generator (138)
pp; 11 DwgNo 1/2

Applicant can use of the Instant Applicat N/A TAF 1-20-2006

N/A See 18/3, AB/1
TAF 1-20-2006

40/3,AB/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

11360358 PMID: 8847973
Measurement of pulsatile flow using **MRI** and a Bayesian technique of probability analysis.
Wise R G; Newling B; Gates A R; Xing D; Carpenter T A; Hall L D
Herchel Smith Laboratory for Medicinal Chemistry, University of Cambridge School of Clinical Medicine, UK.
Magnetic resonance imaging (UNITED STATES) 1996, 14 (2) p173-85, ISSN 0730-725X Journal Code: 8214883
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
This work shows that complete spatial information of periodic pulsatile **fluid flows** can be rapidly obtained by Bayesian probability analysis of flow encoded **magnetic resonance imaging** data. These data were acquired as a set of two-dimensional images (complete two-dimensional sampling of k-space or reciprocal position space) but with a sparse (six point) and nonuniform sampling of q-space or reciprocal displacement space. This approach enables more precise calculation of fluid **velocity** to be achieved than by conventional two q-sample phase encoding of **velocities** , without the significant time disadvantage associated with the complete flow measurement required for Fourier **velocity** imaging. For experimental comparison with the Bayesian analysis applied to nonuniformly sampled q-space data, a Fourier **velocity** imaging technique was used with one-dimensional spatial encoding within a selected slice and a uniform sampling of q-space using 64 values of the pulsed gradients to encode **fluid flow**. Because the pulsatile flows were axially symmetric within the resolution of the experiment, the radial variation of fluid **velocity**, in the direction of the pulsed gradients, was reconstructed from one-dimensional spatial projections of the **velocity** by exploiting the central slice theorem. Data were analysed for internal consistency using linearised flow theories. The results show that nonuniform q-space sampling followed by Bayesian probability analysis is at least as accurate as the combined uniform q-space sampling with Fourier **velocity** imaging and projection reconstruction method. Both techniques give smaller errors than a two-point sampling of q-space (the conventional flow encoding experiment).

N/A See 18/3 AB/2
TAF 1-20-2006

40/3,AB/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10194589 PMID: 8505900
On the use of **Bayesian** probability **theory** for analysis of exponential decay data: an example taken from intravoxel incoherent motion experiments.
Neil J J; Bretthorst G L
Department of Pediatrics, Washington University School of Medicine, St. Louis, Missouri.
Magnetic resonance in medicine - official journal of the Society of Magnetic Resonance in Medicine / Society of Magnetic Resonance in Medicine (UNITED STATES) May 1993, 29 (5) p642-7, ISSN 0740-3194
Journal Code: 8505245

Contract/Grant No.: GM30331; GM; NIGMS; NS01453; NS; NINDS; RR 02469; RR; NCRR
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed

Traditionally, the method of nonlinear least squares (NLLS) analysis has been used to estimate the parameters obtained from exponential decay data. In this study, we evaluated the use of **Bayesian** probability **theory** to analyze such data; specifically, that resulting from intravoxel incoherent motion **NMR** experiments. Analysis was done both on simulated data to which different amounts of Gaussian noise had been added and on actual data derived from rat brain. On simulated data, Bayesian analysis performed substantially better than NLLS under conditions of relatively low signal-to-noise ratio. **Bayesian** probability **theory** also offers the advantages of: a) not requiring initial parameter estimates and hence not being susceptible to errors due to incorrect starting values and b) providing a much better representation of the uncertainty in the parameter estimates in the form of the probability density function. Bayesian analysis of rat brain data was used to demonstrate the shape of the probability density function from data sets of different quality.

40/3,AB/3 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

See 18/3, AB/3
N/A (PAF 1-20-2006

06591063 INSPEC Abstract Number: A9713-8760I-009, B9707-7510B-028, C9707-7330-043
Title: Regularized estimation of flow patterns in MR velocimetry
Author(s): Herment, A.; Giovannelli, J.-F.; Mousseaux, E.; Idier, J.; Decesare, A.; Jolivet, O.; Bittoun, J.
Author Affiliation: Inst. Nat. de la Sante et de la Recherche Med., Paris, France
Conference Title: Proceedings. International Conference on Image Processing (Cat. No.96CH35919) Part vol.3 p.291-4 vol.3
Publisher: IEEE, New York, NY, USA
Publication Date: 1996 Country of Publication: USA 3 vol. (xlviii+1029+1067+1073) pp.
ISBN: 0 7803 3259 8 Material Identity Number: XX96-03469
U.S. Copyright Clearance Center Code: 0 7803 3258 X/96/$5.00
Conference Title: Proceedings of 3rd IEEE International Conference on Image Processing
Conference Sponsor: IEEE Signal Process. Soc
Conference Date: 16-19 Sept. 1996 Conference Location: Lausanne, Switzerland
Language: English

Abstract: A Bayesian estimator of the **magnetic resonance** (MR) **velocity** image is proposed. It is based on a Markov model accounting for the spatial structure of the flow **velocity**. On the other hand, low MR signal intensity yields high uncertainty on the **velocity**. Such an important property is taken into account through the observation model. The resulting posterior likelihood is optimized using an iterative coordinate descent (ICD) algorithm. Compared to the usual least squares solution, simulation results on flows with parabolic and flat profiles demonstrate a significant gain of in the mean square error.

Subfile: A B C

40/3,AB/4 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

See 18/3, AB/4
N/A TAF
1-20-2006

05881692 INSPEC Abstract Number: A9506-4780-001
Title: Bayesian analysis for quantitative **NMR** flow and diffusion imaging
Author(s): Da Xing; Gibbs, S.J.; Derbyshire, J.A.; Fordham, E.J.; Carpenter, T.A.; Hall, L.D.
Author Affiliation: Herchel Smith Lab. for Med. Chem., Cambridge Univ. Sch. of Clinical Med., UK
Journal: Journal of Magnetic Resonance, Series B vol.106, no.1 p. 1-9
Publication Date: Jan. 1995 Country of Publication: USA
ISSN: 1064-1866
U.S. Copyright Clearance Center Code: 1064-1866/95/$6.00
Language: English
Abstract: This study demonstrates the use of a **Bayesian** statistical **method** for data analysis in practical flow and diffusion measurements based on pulsed-field-gradient **magnetic-resonance imaging**. In addition to providing estimates of both the **velocity** and the diffusion coefficient at each voxel, the technique produces reliable fitting errors for these measurements. Bayesian analysis is especially useful, compared to the Fourier transform method, for treating noisy data which are truncated and/or sparsely and nonuniformly sampled in q, the wavevector for motion encoding. Nonuniform sampling in q is shown to be more efficient than uniform sampling for **velocity** and diffusion measurement; it can result in smaller fitting errors for the estimated parameters corresponding to fewer q samples and hence less data-acquisition time. The specific example of laminar **flow** of **water** in a straight cylindrical tube is illustrated with experimental and simulated data.
Subfile: A

See 18/3 AB/5
N/A TAF 1-20-2006

40/3,AB/5 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

03774474 Genuine Article#: QE359 Number of References: 27
Title: BAYESIAN-ANALYSIS FOR QUANTITATIVE **NMR** FLOW AND DIFFUSION IMAGING (Abstract Available)
Author(s): XING D; GIBBS SJ; DERBYSHIRE JA; FORDHAM EJ; CARPENTER TA; HALL LD
Corporate Source: UNIV CAMBRIDGE,SCH CLIN MED,HERCHEL SMITH LAB MED CHEM,UNIV FORVIE SITE,ROBINSON WAY/CAMBRIDGE CB2 2PZ//ENGLAND/; UNIV CAMBRIDGE,SCH CLIN MED,HERCHEL SMITH LAB MED CHEM/CAMBRIDGE CB2 2PZ//ENGLAND/
Journal: JOURNAL OF MAGNETIC RESONANCE SERIES B, 1995, V106, N1 (JAN), P1-9
ISSN: 1064-1866
Language: ENGLISH Document Type: ARTICLE
Abstract: This study demonstrates the use of a **Bayesian** statistical **method** for data analysis in practical flow and diffusion measurements based on pulsed-held-gradient **magnetic-resonance imaging**. In addition to providing estimates of both the **velocity** and the diffusion coefficient at each voxel, the technique produces reliable fitting errors for these measurements.

Bayesian analysis is especially useful, compared to the Fourier transform method, for treating noisy data which are truncated and/or sparsely and nonuniformly sampled in q, the wavevector for motion encoding. Nonuniform sampling in q is shown to be more efficient than uniform sampling for **velocity** and diffusion measurement; it can result in smaller fitting errors for the estimated parameters corresponding to fewer q samples and hence less data-acquisition time. The specific example of laminar **flow** of **water** in a straight cylindrical tube is illustrated with experimental and simulated data.

See 18/3, AB/5 N/A TAF 1-26-2006

N/A TAF 1-20-2006

44/3,AB/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

11602289 PMID: 8912022
The application of an artificial neural network to Doppler ultrasound waveforms for the classification of arterial disease.
Smith J H; Graham J; Taylor R J
Department of Medical Biophysics, University of Manchester, United Kingdom.
International journal of clinical monitoring and computing (NETHERLANDS) May 1996, 13 (2) p85-91, ISSN 0167-9945 Journal Code: 8601284
Publishing Model Print
Document type: Clinical Trial; Controlled Clinical Trial; Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
In this study we have investigated the application of an Artificial Neural Net classifier to the diagnosis of vascular disease using Doppler ultrasound blood-**velocity** /time waveforms. A multi-layer perceptron network was trained with waveforms from control subjects and from patients with arterial disease. The diseased cases were confirmed by angiography and allocated to three groups according to the location of the stenosis: proximal or distal to the site of measurement or multi-segmental. We compared network classification results with a Bayesian classifier following a Principal Component Analysis of the waveforms. Versions of both classifiers were trained to discriminate two classes (normal v. abnormal) and four classes. In both cases the neural networks gave superior discrimination to the Bayesian classifier. While the four-class network was unable to provide useful discrimination among the stenosis sites, discrimination between abnormal classes was obtained which is comparable to that achieved by a human expert observer.

44/3,AB/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

N/A 1-20-2006

07249213 PMID: 3158587
The application of classification techniques to biomedical data, with particular reference to ultrasonic Doppler blood **velocity** waveforms.
Evans D H; Caprihan A
IEEE transactions on bio-medical engineering (UNITED STATES) May 1985, 32 (5) p301-11, ISSN 0018-9294 Journal Code: 0012737
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed

44/3,AB/3 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

08036389 INSPEC Abstract Number: A2001-20-8760B-020, B2001-10-7510H-069, C2001-10-7330-341
Title: Pre- and post-processing filters for improvement of blood **velocity** estimation

Author(s): Schlaikjer, M.; Jensen, J.A.
Author Affiliation: Dept. of Inf. Technol., Tech. Univ. Denmark, Lyngby, Denmark
Conference Title: 2000 IEEE Ultrasonics Symposium. Proceedings. An International Symposium (Cat. No.00CH37121) Part vol.2 p.1531-6 vol.2
Editor(s): Schneider, S.C.; Levy, M.; McAvoy, B.R.
Publisher: IEEE, Piscataway, NJ, USA
Publication Date: 2000 Country of Publication: USA 2 vol. 1950 pp.
ISBN: 0 7803 6365 5 Material Identity Number: XX-2001-00945
U.S. Copyright Clearance Center Code: 0 7803 6365 5/2000/$10.00
Conference Title: 2000 IEEE Ultrasonics Symposium. Proceedings. An International Symposium
Conference Sponsor: IEEE Ultrasonics, Ferroelectr., & Frequency Control Soc
Conference Date: 22-25 Oct. 2000 Conference Location: San Juan, Puerto Rico
Language: English

NO MRI Data
N/A TAF
12-2006

Abstract: The standard deviation on the blood **velocity** estimates are influenced by measurement noise, **velocity** spread, and signal alteration introduced by de-noising and clutter filters. A noisy and non-smooth appearance of the **velocity** distribution is obtained, which is not consistent with the actual **velocity** in the vessels. Post-processing is beneficial to obtain an image that minimizes the variation, and present the important information to the clinicians. Applying the theory of fluid mechanics introduces restrictions on the variations possible in a flow field. Neighboring estimates in time and space should be highly correlated, since transitions should occur smoothly. This idea is the basis of the algorithm developed in this study. From **Bayesian** image processing **theory** an a posteriori probability distribution for the **velocity** field is computed based on constraints on smoothness. An estimate of the **velocity** in a given point is computed by maximization of the probability, given prior knowledge of the original estimate in that position, and the estimates in the neighboring positions in time and space. The method has been tested on simulated 2D RF-data resembling signals from the carotid artery with different signal-to-noise ratios (SNR). The exact extent of the vessel and the true **velocities** are thereby known. **Velocity** estimates were obtained by employing Kasai's autocorrelator on the data. The post-processing filter was used on the computed 2D **velocity** map. An improvement of the RMS error in the range of 15-53% was observed. For low SNRs the highest improvement was obtained. Visual inspection of the images show a high qualitative improvement. A more smooth profile has been obtained, which more closely resembles the true smooth profile. The same conclusion can be drawn after application of the filter to in-vivo data acquired with a dedicated sampling system.

Subfile: A B C

44/3,AB/4 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

07670055 INSPEC Abstract Number: A2000-18-8280T-076, B2000-09-7230L-101
Title: A sensor counting particulates in liquids in real-time across a wide-bore using Bayesian inference
Author(s): Hazell, M.S.; Jones, R.; Luffman, P.E.; Sewell, R.F.
Author Affiliation: Cambridge Consultants Ltd., UK
Conference Title: Sensors and their Applications X. Proceedings of the Tenth Conference on Sensors and their Applications p.89-94

Editor(s): White, N.M.; Augousti, A.T.
Publisher: IOP Publishing, Bristol, UK
Publication Date: 1999 Country of Publication: UK x+336 pp.
ISBN: 0 7503 0662 9 Material Identity Number: XX-1999-02517
U.S. Copyright Clearance Center Code: 0 7503 0662 9/99/$30.00
Conference Title: Proceedings of 10th Conference on Sensors and their Applications
Conference Date: 5-8 Sept. 1999 Conference Location: Cardiff, UK
Language: English
Abstract: We have developed a robust in-line sensor which measures the size distribution of particles over a diameter range of 1.6 to 25 mu m in **liquids flowing** at 1 to 6 m/s. The sensor is based on a new concept in which precision bars of light are projected across a wide-bore pipe, with the obscuration signals due to articles in transit being processed using Bayesian inference to determine probabilities for different size and **velocity** species. We describe the basic principles of the sensor, its signal processing, performance specifications and experimental results, namely counting silica dust in hydraulic oil and in-process measurements in the water industry.
Subfile: A B

NA TAF 1-20-2006

44/3,AB/5 (Item 3 from file: 2)
DIALOG(R)File 2:INSPEC

07541684 INSPEC Abstract Number: A2000-09-0630C-005, B2000-05-7320C-008
Title: Counting particulates in liquids across a wide bore in real-time using Bayesian inference
Author(s): Hazell, M.S.; Jones, R.; Luffman, P.E.; Sewell, R.F.
Author Affiliation: Cambridge Consultants Ltd., Cambridge, UK
Journal: Measurement Science & Technology vol.11, no.3 p.227-36
Publisher: IOP Publishing,
Publication Date: March 2000 Country of Publication: UK
CODEN: MSTCEP ISSN: 0957-0233
SICI: 0957-0233(200003)11:3L.227:CPLA;1-0
Material Identity Number: N647-2000-003
U.S. Copyright Clearance Center Code: 0957-0233/2000/030227+10$30.00
Language: English
Abstract: We report on our sensor which measures the size distribution of particulate contaminants (over diameter range 1.6-25 mu m) in **liquids flowing** at 1-6 m s/sup -1/ through a wide-bore pipe. Novel optics are used in which particles transit precision bars of light projected across the pipe. The resulting obscuration signals are processed using Bayesian inference to determine probabilities for transits by different size and **velocity** species, whence the species' number concentration. We describe the basic principle of the sensor, its performance specification, hardware and signal processing. Finally, we note experimental results, namely: counting silica dust in hydraulic oil, and preliminary in-process measurements from the water industry.
Subfile: A B

NA TAF 1-20-2006

44/3,AB/6 (Item 4 from file: 2)
DIALOG(R)File 2:INSPEC

06798742 INSPEC Abstract Number: A9804-0130C-008, C9802-7440-065

Title: IMACS-COST Conference `Computational Fluid Dynamics, Three-Dimensional Complex Flows'
Journal: Mathematics and Computers in Simulation vol.44, no.4
Publisher: Elsevier,
Publication Date: 14 Nov. 1997 Country of Publication: Netherlands
CODEN: MCSIDR ISSN: 0378-4754
Material Identity Number: M225-97008
U.S. Copyright Clearance Center Code: 97/$17.00
Conference Title: IMACS-COST Conference `Computational Fluid Dynamics, Three-Dimensional Complex Flows'
Conference Date: Sept. 1995 Conference Location: Lausanne, Switzerland
Language: English
Abstract: The following topics were dealt with: a numerical investigation of Schwarz domain decomposition techniques for elliptic problems on unstructured grids; prediction of complex flow fields using higher-order **turbulent** closures; **Bayesian** -validated computer-simulation surrogates for optimization and design (error estimates and applications); computation of **turbulent** flow in general domains; numerical simulation of 2D and 3D complex **flows** of viscoelastic **fluids** using the stream-tube method; the treatment of fluid problems by methods of Clifford analysis; and a new approach to modelling an unsteady free surface in boundary integral methods with application to bubble-structure interactions.
Subfile: A C
Copyright 1998, IEE

NO MRI Data N/A TAF 1-26-2006

44/3,AB/7 (Item 1 from file: 6)
DIALOG(R)File 6:NTIS
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1829398 NTIS Accession Number: PB94-202520
Provoking and Measuring Cell Losses in ATM Systems by Importance Sampling, Control Variables and Load Cycles
Heegaard, P. E. ; Helvik, B. E.
DELAB, Trondheim (Norway).
Corp. Source Codes: 104528000
Report No.: STF40-A93148; ISBN-82-595-8174-4
17 Dec 93 126p
Languages: English
Journal Announcement: GRAI9422
Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)321-8547; and email at orders@ntis.fedworld.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.
NTIS Prices: PC E08/MF E08
The paper introduces an **accelerated** measurement technique for Asynchronous Transfer Mode (ATM) systems. It requires no control of the target system. It only relies on the ability to be given continuous feedback of the target system response. The approach is therefore applicable to measurements of real systems, as well as simulators. Unbiased estimates of the cell loss are obtained by combining two variance reduction techniques. The total observation period is divided into measurement periods defined by load cycles. A number of options has been investigated by simulation.

N/A TAF 1-26-2006

44/3,AB/8 (Item 1 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online
(c) 2005 ProQuest Info&Learning. All rts. reserv.

01431487 AADAAI9529268
STOCHASTIC CHARACTERIZATION OF SUBSURFACE FLOW PARAMETERS USING GEOPHYSICAL AND HYDROLOGICAL DATA (GROUNDWATER FLOW, LITHOFACIES, PERMEABILITY)

Author: COPTY, NADIM KAMEL
Degree: PH.D.
Year: 1994
Corporate Source/Institution: UNIVERSITY OF CALIFORNIA, BERKELEY (0028)
Source: VOLUME 56/05-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PAGE 2531. 184 PAGES

The analysis and management of groundwater flow problems often involve the prediction of **fluid flow** and/or contaminant migration patterns. These phenomena, however, are strongly influenced by the heterogeneity of the hydrogeological properties of the soil. The purpose of this dissertation is to derive joint geophysical-hydrogeological procedures for the characterization of subsurface flow parameters. The first part of this study presents a formal stochastic approach for the integration of surface seismic data and well data into the identification of the spatial arrangement (location, geometry, and interconnectedness) of lithofacies. Towards this goal, the lithology of the subsurface is represented through a random indicator function whose spatial structure is identified from seismic reflection data and well logs. Seismic interval **velocities** and measures of their uncertainties are computed from normal moveout corrections to the seismic reflection data. Calibration curves constructed from the well logs transform these **velocity** estimates into a lithology indicator prior probability field. From the well data and the prior probability field, the indicator covariance function and its associated confidence limits are computed. Neighboring lithology logs and the indicator covariance function are then combined to update the indicator probability field. To illustrate the applicability of the proposed characterization procedure, a semi-synthetic case study, based on the Fremont study area near the city of Fremont, California, is performed.

In the second part of this dissertation, a **Bayesian method** is developed to estimate the spatial distribution of the permeability. In addition to sparsely sampled permeability and pressure data, the proposed approach incorporates densely sampled seismic **velocity** data along with semi-empirical relationships between seismic **velocity**, permeability and pressure. A hydrological inversion is first performed, based solely on the permeability and pressure data. In light of the available seismic data, the **velocity**-permeability-pressure relationships are then used to update, in a Bayesian sense, the image of the permeability field. To demonstrate the usefulness of this approach, synthetic case studies are performed. For further validation, the proposed methodology is applied to real data collected at Kesterson Reservoir, California. These studies demonstrate that by joining seismic data and hydrological data into a common inverse procedure, improved permeability images can be reproduced.

No MRI Data
N/A THF 12-2006

47/3,AB/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

09655798 PMID: 1779733
Bayesian image processing in **magnetic resonance imaging**

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Hu X P; Johnson V; Wong W H; Chen C T
Department of Radiology, University of Chicago Hospitals, Illinois.
Magnetic resonance imaging (UNITED STATES) 1991, 9 (4) p611-20,
ISSN 0730-725X Journal Code: 8214883
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed

No Dynamic Model
No Flow across a vessel
No Motion [illegible] MRI Data

N/P TAF
1-20-2006

In the past several years, image processing techniques based on Bayesian models have received considerable attention. In our earlier work, we developed a novel Bayesian approach which was primarily aimed at the processing and reconstruction of images in positron emission tomography. In this paper, we describe how the technique has been adopted to process **magnetic resonance images** in order to reduce noise and artifacts, thereby improving image quality. In this framework, the image is assumed to be a statistical variable whose posterior **probability** density **conditional** on the observed image is modeled by the product of the likelihood function of the observed data with a prior density based our prior knowledge. A Gibbs random field incorporating local continuity information and with edge-detection capability is used as the prior model. Based on the formalism of the posterior density, we can compute an estimate of the image using an iterative technique. We have implemented this technique and applied it to phantom and clinical images. Our results indicate that the approach works reasonably well for reducing noise, enhancing edges, and removing ringing artifact.

47/3,AB/2 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

09025574 INSPEC Abstract Number: A2004-17-8760I-042, B2004-08-7510N-070, C2004-08-7330-623
Title: Semi-automated segmentation of cortical subvolumes via hierarchical mixture modelling
Author(s): Ratnanather, J.T.; Priebe, C.E.; Miller, M.I.
Author Affiliation: Center for Imaging Sci., Johns Hopkins Univ., Baltimore, MD, USA
Journal: Proceedings of the SPIE - The International Society for Optical Engineering Conference Title: Proc. SPIE - Int. Soc. Opt. Eng. (USA) vol.5032 p.1602-12
Publisher: SPIE-Int. Soc. Opt. Eng,
Publication Date: 2003 Country of Publication: USA
CODEN: PSISDG ISSN: 0277-786X
SICI: 0277-786X(2003)5032L.1602:SASC;1-Z
Material Identity Number: C574-2003-173
U.S. Copyright Clearance Center Code: 0277-786X/03/$15.00
Conference Title: Medical Imaging 2003. Image Processing
Conference Sponsor: SPIE
Conference Date: 17-20 Feb. 2003 Conference Location: San Diego, CA, USA
Language: English

Abstract: We propose a method which allows for the flexibility of a Gaussian mixture model - with model complexity selected adaptively from the data - for each tissue class. Our procedure involves modelling each class as a semiparametric mixture of Gaussians. The major difficulty associated with employing such semiparametric methods is overcome by solving dynamically the model selection problem. The crucial step of determining class-conditional mixture complexities for (unlabeled) test data in the unsupervised case is accomplished by matching models to a predefined data base of hand labelled experimental tissue samples. We model the class-**conditional probability** density functions via the "alternating kernel and mixture" (AKM) method which involves (1) semi-parametric estimation of subject-specific class-conditional marginal densities for a set of training volumes, (2) nearest neighbor matching of the test data to the training models providing for semi-automated class-conditional mixture complexities, (3) parameter fitting of the selected training model to the test data, and (4) plug-in Bayes classification of unlabeled voxels. Compared with previous approaches using partial volume mixtures for ten cingulate gyri, the hierarchical mixture model methodology provides superior automatic segmentation results with a performance improvement that is statistically significant ($p = 0.03$ for a paired one-sided t-test).

Subfile: A B C

N/A TAF 1-20-2006

47/3,AB/3 (Item 2 from file: 2)

DIALOG(R)File 2:INSPEC

08876012 INSPEC Abstract Number: A2004-07-8760I-005, B2004-04-6135-040, C2004-04-7330-057

Title: Bayesian tissue segmentation of multispectral brain images

Author(s): Choong Leong Tan; Rajapakse, J.C.

Author Affiliation: Sch. of Comput. Eng., Nanyang Technol. Univ., Singapore, Singapore

Conference Title: ICONIP '02. Proceedings of the 9th International Conference on Neural Information Processing. Computational Intelligence for the E-Age (IEEE Cat. No.02EX575) Part vol.1 p.206-10 vol.1

Editor(s): Wang, L.; Rajapakse, J.C.; Fukushima, K.; Lee, S-Y.; Yao, X.

Publisher: Nanyang Technol. Univ, Singapore

Publication Date: 2002 Country of Publication: Singapore 5 vol.xlix+2687 pp.

ISBN: 981 04 7524 1 Material Identity Number: XX-2002-03291

Conference Title: 9th International Conference on Neural Information Processing

Conference Sponsor: Asia-Pacific Neural Network Assembly; Singapore Neuroscience Assoc.; SEAL & FSKD Conference Steering Committees; IEEE Neural Networks Soc.; Int. Neural Network Soc.; Eur. Neural Network Soc.; SPIE

Conference Date: 18-22 Nov. 2002 Conference Location: Singapore

Language: English

N/A TAF 1-20-2006

Abstract: The paper addresses the issue of segmenting simultaneously acquired multispectral **magnetic resonance** (MR) head scans into tissue classes in a synergetic way. Previous methods have only taken a maximum likelihood approach. We extend the approach by incorporating image priors. Since the independence of T/sub 2/ weighted and proton density (PD) images is not valid, the combined probability of the two images are modeled is a bivariate Gaussian function giving the **conditional probability** . For the prior model, a multi-level logistic model (MLL) is employed. The maximum a posteriori (MAP) estimate is taken by optimizing the probability of a voxel being a particular tissue type given the

corresponding probabilities from both images and the image prior probability. Due to the intractability of minimising the global energy, an iterative suboptimal approach is used instead. Experiments on simultaneously acquired proton density (PD) and T2 weighted images showed encouraging results.
Subfile: A B C
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47/3,AB/4 (Item 3 from file: 2)
DIALOG(R)File 2:INSPEC
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07846701 INSPEC Abstract Number: B2001-03-7510N-059, C2001-03-7330-461
Title: Robust methodology for the discrimination of brain tumours from in vivo **magnetic resonance** spectra
Author(s): Lisboa, P.J.G.; Lee, A.Y.B.; El-Deredy, E.; Huang, Y.; Harris, P.
Author Affiliation: Dept. of Comput. & Math. Sci., Liverpool Univ., UK
Conference Title: First International Conference on Advances in Medical Signal and Information Processing (Conf. Publ. No.476) p.88-95
Publisher: IEE, London, UK
Publication Date: 2000 Country of Publication: UK xii+332 pp.
ISBN: 0 85296 728 4 Material Identity Number: XX-2001-00203
Conference Title: First International Conference on Advances in Medical Signal and Information Processing
Conference Date: 4-6 Sept. 2000 Conference Location: Bristol, UK
Language: English
Abstract: **Magnetic resonance** spectroscopy (MRS) is a non-invasive technique representing a biochemical fingerprint of tissue composition. However, signal variation and noise cause considerable mixing between tissue categories, making class assignments unreliable. Noise filtering is investigated by benchmarking independent component analysis against univariate T/sup 2/ tests as pre-filters for variable selection, followed by an evaluation of the predictive power of the resulting models. We examine different discrimination strategies of variable selection and classifier validation and propose a robust methodology for the discrimination of 5 types and grades of brain tumours and cysts from 98 in vivo PROBE spectra. We show that use of the bootstrap technique for the selection of subsets of predictor spectral frequencies, and for estimating bias-corrected misclassification errors, gives more reliable and robust results. Bayesian estimates of the class **conditional probabilities** are obtained with linear discriminants and neural network models, and the optimal classifier structure is found to consist of coupled pairwise models. The bias-corrected overall classification rate achieved in this study is 73%.
Subfile: B C
Copyright 2001, IEE

47/3,AB/5 (Item 4 from file: 2)
DIALOG(R)File 2:INSPEC
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07253379 INSPEC Abstract Number: A1999-13-8760I-002, B1999-07-7510N-002, C1999-07-7330-009
Title: Improved method for reduction of truncation artifact in **magnetic resonance imaging**
Author(s): Soo-Jin Lee
Author Affiliation: Dept. of Electron. Eng., Paichai Univ., Taejon, South

Korea
Journal: Proceedings of the SPIE - The International Society for Optical Engineering Conference Title: Proc. SPIE - Int. Soc. Opt. Eng. (USA) vol.3460 p.587-98
Publisher: SPIE-Int. Soc. Opt. Eng,
Publication Date: 1998 Country of Publication: USA
CODEN: PSISDG ISSN: 0277-786X
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Conference Title: Applications of Digital Image Processing XXI
Conference Sponsor: SPIE
Conference Date: 21-24 July 1998 Conference Location: San Diego, CA, USA
Language: English
Abstract: In Fourier **magnetic resonance imaging** (**MRI**), signals from different positions in space are phase-encoded by the application of a gradient before the total signal from the imaged subject is acquired. In practice, a limited number of the phase-encoded signals are often acquired in order to minimize the duration of the studies and maintain adequate signal-to-noise ratio. However, this results in incomplete sampling in spatial frequency or truncation of the k-space data. The truncated data give rise to images degraded by limited resolution and ringing near sharp edges (truncation artifact). A variety of methods have been proposed to reconstruct images with reduced truncation artifact. In this work, we use a regularization method in the context of a Bayesian framework. The regularization approach is applied directly to the reconstructed image. In this framework, the 2D image is modeled as a random field whose posterior **probability conditioned** on the observed image is represented by the product of the likelihood of the observed data with the prior based on the local spatial structure of the underlying image. Since the truncation artifact appears in only one of the two spatial directions, the use of conventional piecewise-constant constraints may degrade soft edge regions in the other direction that are less affected by the truncation artifact. Here, we consider more elaborate forms of constraints than the conventional piecewise-smoothness constraints, which can capture actual spatial information about the **MR images**. We use a deterministic annealing method. The proposed method improves tissue regularity and boundary definition without degrading soft edge regions.
Subfile: A B C

MA TAF 1-20-2006

47/3,AB/6 (Item 5 from file: 2)
DIALOG(R)File 2:INSPEC

05051471 INSPEC Abstract Number: A9203-8760G-011
Title: Bayesian image processing in **magnetic resonance imaging**
Author(s): Xiaoping Hu; Johnson, V.; Wong, W.H.; Chin-Tu-Chen
Author Affiliation: Dept. of Radiol., Chicago Univ. Hospitals, IL, USA
Journal: Magnetic Resonance Imaging vol.9, no.4 p.611-20
Publication Date: 1991 Country of Publication: UK
CODEN: MRIMDQ ISSN: 0730-725X
U.S. Copyright Clearance Center Code: 0730-725X/91/$3.00+.00
Language: English
Abstract: In the past several years, image processing techniques based on Bayesian models have received considerable attention. In their earlier work, the authors developed a novel Bayesian approach which was primarily

aimed at the processing and reconstruction of images in positron emission tomography. They describe how the technique has been adopted to process **magnetic resonance images** in order to reduce noise and artifacts, thereby improving image quality. In this framework, the image is assumed to be a statistical variable whose posterior **probability** density **conditional** on the observed image is modeled by the product of the likelihood function of the observed data with a prior density based on prior knowledge. A Gibbs random field incorporating local continuity information and with edge-detection capability is used as the prior model. Based on the formalism of the posterior density, the authors can compute an estimate of the image using an iterative technique. They have implemented this technique and applied it to phantom and clinical images. The results indicate that the approach works reasonably well for reducing noise, enhancing edges, and removing ringing artifact.

N/A TAF 1-20-2006

Subfile: A

47/3,AB/7 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

03769166
E.I. No: EIP93101115599
Title: **Magnetic resonance** voxel labeling based on **Bayesian** Decision **Theory**
Author: Verbeeck, Rudi; Vandermeulen, Dirk; Suetens, Paul; Marchal, Guy
Corporate Source: Katholieke Univ. Leuven, Heverlee, Belg
Conference Title: Medical Imaging 1993: Image Processing
Conference Location: Newport Beach, CA, USA Conference Date: 19920214-19920219
E.I. Conference No.: 19474
Source: Proceedings of SPIE - The International Society for Optical Engineering v 1898 1993. Publ by Society of Photo-Optical Instrumentation Engineers, Bellingham, WA, USA. p 408-419

N/A TAF 1-20-2006

Publication Year: 1993
CODEN: PSISDG ISSN: 0277-786X ISBN: 0-8194-1131-0
Language: English
Abstract: In this paper, **Bayesian** decision **theory** is applied to the labelling of voxels in **Magnetic Resonance** (**MR**) **images** of the brain. The Bayes optimal decision rule defines a cost function that consists of a loss function weighted by the a posteriori probability of the labelling. Two options for the loss function are presented in this paper. A zero-one loss function gives rise to the maximum a posteriori (MAP) estimate, which requires a simulated annealing optimization process. The probability term of the cost function is the product of the a priori probability of the labelling (or an a priori model of the underlying scene) and the **conditional probability** of the data, given the labelling (or the model for the imaging modality). By modelling the label image as a Markov random field, the model for the underlying scene can be described by a Gibbs distribution. In the application discussed, here, they reflect the compatibility of anatomical structures. The imaging method represents the expected voxel intensities and possible noise or image distortions. 26 refs.

47/3,AB/8 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE

11797132 EMBASE No: 2002367880

Automated assignment of NOESY **NMR** spectra using a knowledge based method (KNOWNOE)

Gronwald W.; Moussa S.; Elsner R.; Jung A.; Ganslmeier B.; Trenner J.; Kremer W.; Neidig K.-P.; Kalbitzer H.R.

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Journal of Biomolecular NMR (J. BIOMOL. NMR) (Netherlands) 2002, 23/4 (271-287)

CODEN: JBNME ISSN: 0925-2738

DOCUMENT TYPE: Journal ; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 38

Automated assignment of NOESY spectra is a prerequisite for automated structure determination of biological macromolecules. With the program KNOWNOE we present a novel, knowledge based approach to this problem. KNOWNOE is devised to work directly with the experimental spectra without interference of an expert. Besides making use of routines already implemented in AUREMOL, it contains as a central part a knowledge driven Bayesian algorithm for solving ambiguities in the NOE assignments. These ambiguities mainly arise from chemical shift degeneration which allows multiple assignments of cross peaks. Using a set of 326 protein **NMR** structures, statistical tables in the form of atom-pairwise volume probability distributions (VPDs) were derived. VPDs for all assignment possibilities relevant to the assignments of interproton NOEs were calculated. With these data for a given cross peak with N possible assignments ASUBi (i = 1,. . .,N) the **conditional probabilities** P(ASUBi, a\VSUB0) can be calculated that the assignment ASUBi determines essentially all (alpha-times) of the cross peak volume VSUB0. An assignment ASUBk with a probability P(ASUBk, a\VSUB0) higher than 0.8 is transiently considered as unambiguously assigned. With a list of unambiguously assigned peaks a set of structures is calculated. These structures are used as input for a next cycle of iteration where a distance threshold DSUBmax, is dynamically reduced. The program KNOWNOE was tested on NOESY spectra of a medium size protein, the cold shock protein (TmCsp) from Thermotoga maritima. The results show that a high quality structure of this protein can be obtained by automated assignment of NOESY spectra which is at least as good as the structure obtained from manual data evaluation.

N/A TAF
1-20-2006

47/3,AB/9 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

06841644 Genuine Article#: ZV969 Number of References: 69
Title: The application of **Bayes' theorem** in natural products as a guide for skeletons identification (ABSTRACT AVAILABLE)
Author(s): Emerenciano VD (REPRINT) ; Ferreira MJP; Branco MD; Dubois JE
Corporate Source: UNIV SAO PAULO,INST QUIM, CP 26077/BR-05599970 SAO PAULO//BRAZIL/ (REPRINT); UNIV SAO PAULO,INST MATEMAT/BR-05599970 SAO PAULO//BRAZIL/; UNIV PARIS 07,CNRS, INST TOPOL & DYNAM SYST/F-75005 PARIS//FRANCE/
Journal: CHEMOMETRICS AND INTELLIGENT LABORATORY SYSTEMS, 1998, V40, N1 (MAY), P83-92
ISSN: 0169-7439 Publication date: 19980500
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS
Language: English Document Type: ARTICLE
Abstract: In this work, we present an application of **Bayes' theorem** in natural products as a guide for skeletons

identification. We wrote an algorithm in PROLOG language, which computes **conditional probabilities** for finding skeletons types of sesquiterpene lactones in any taxon, using botanic information as input. The approach was applied to the Asteraceae family, and the results are accurate enough to allow good skeletons identification, even for the most complex chemical compound. The relationship between our approach and others procedures for skeleton identification is briefly discussed.

N/A TAF 1-20-2006

47/3,AB/10 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016653978
WPI Acc No: 2004-812698/200480
XRPX Acc No: N04-641281

Magnetic resonance imaging flow parameter estimating method for medical diagnosis, involves resolving **magnetic imaging** data with respect to **magnetic resonance imaging** model, using **conditional probabilities** based on **Bayes` Theorem**

Patent Assignee: INGUVA R (INGU-I); MADARASZ F L (MADA-I)
Inventor: INGUVA R; MADARASZ F L
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20040217760	A1	20041104	US 2000181823	P	20000211	200480 B
			US 2001781035	A	20010209	

Appln cnts are Work Not Applicable as Prior Art Ex. TAF 1-20-2006

Priority Applications (No Type Date): US 2000181823 P 20000211; US 2001781035 A 20010209
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20040217760	A1		11	G01V-003/00	Provisional application US 2000181823

Abstract (Basic): US 20040217760 A1
Abstract (Basic):

NOVELTY - The method involves accessing **magnetic resonance imaging** data and providing a **magnetic resonance imaging** model function. The **magnetic imaging** data is resolved with respect to the **magnetic resonance imaging** model using **conditional probabilities** based on **Bayes` Theorem**. The probabilities are compared for two noise models and determining which noise model of the two noise models is better.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a system for flow parameter estimates in **magnetic resonance imaging**.

USE - Used for estimating a flow parameter in **magnetic resonance imaging** that provides information about anatomical structure, enables quantitative anatomical studies of diseases, derivation of computerized anatomical atlases, and three-dimensional visualization of internal anatomy that is utilized for pre-operative and intra-operative visualization, and in the guidance of therapeutic intervention.

ADVANTAGE - The method facilitates for resolving the **magnetic imaging** data, using **conditional probabilities** based on **Bayes` Theorem**, thus providing higher resolution and detail flow parameters for smaller/ deeper vessels.

DESCRIPTION OF DRAWING(S) - The drawing shows an overview of a **magnetic resonance imaging** system.

Computer system (114)

Spectrometer (126)

Front-end-controller (128)

Power amplifier (134)

Waveform generator (138)

pp; 11 DwgNo 1/2

Query/Command : HIS

File : PLUSPAT

SS Results

1		[redacted]
2	1	(1) ..FAM US20040217760/PN
3	1	..CITF US20040217760/PN
4	1	..CITB US20040217760/PN

Search statement 5

NPL STIC Search

Questel Family Search,

Applicants own work cited

The only Result

which is N/A as per Ex. TAF 1-20-2006

Query/Command : PRT MAX SET IMG

1 / 1 PLUSPAT - ©QUESTEL-ORBIT - image

PN - US2004217760 A1 20041104 [US20040217760]

TI - (A1) Bayesian methods for flow parameter estimates in magnetic resonance imaging

IN - (A1) INGUVA RAMARAO (US); MADARASZ FRANK L (US)

AP - US78103501 20010209 [2001US-0781035]

FD - Provisional: US 60181823 - 20000211 [2000US-P181823]

PR - US78103501 20010209 [2001US-0781035]
US18182300P 20000211 [2000US-P181823]

IC - (A1) G01V-003/00

EC - G01R-033/563

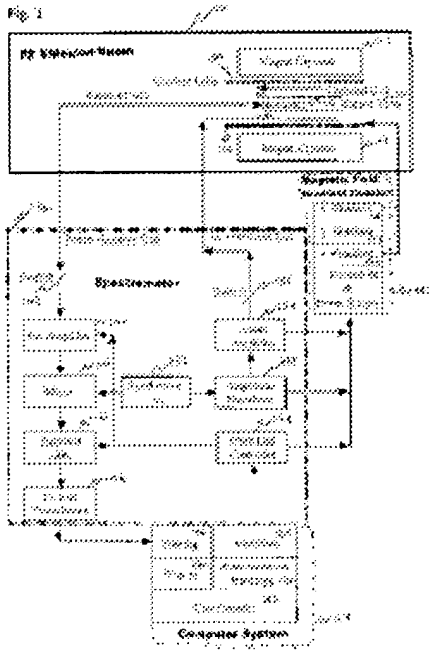
PCL - ORIGINAL (O) : 324307000; CROSS-REFERENCE (X) : 324309000

DT - Basic

STG - (A1) Utility Patent Application published on or after January 2, 2001

AB - A method for flow parameter estimates magnetic resonance imaging comprising the following steps: accessing magnetic resonance imaging data; inputting a magnetic resonance imaging model function; and, using conditional probabilities based on Bayes' Theorem.

UP - 2004-45



Search statement 3